JUL 17 1933

PAPER TRADE JOURNAL

Vol. XCVII JULY 6, 1933 No. 1

In these pages . . .

in October of 1932, your attention was called to the *better fastness to light* of Geigy's—

Fast Yellow G for Coated Paper

. . . that while ten hour fadeometer tests showed a variation from the original shade, comparison of it with anilines, commonly employed for Canary Yellows, showed that Fast Yellow G for Coated Paper to have markedly superior fastness to light.

The money value presented, about which nothing was mentioned, has been verified in eight months of practical employment in many coating mills, which, not only have proved the superior fastness to light of the color, but also that it can be used at a lower cost than dyestuffs which had been considered among the cheapest shading and "lifting" colors a mill could use.

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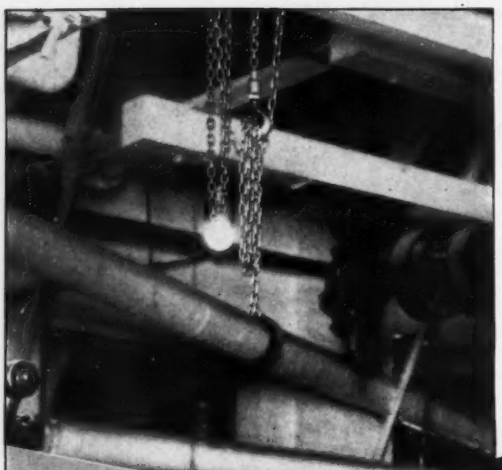

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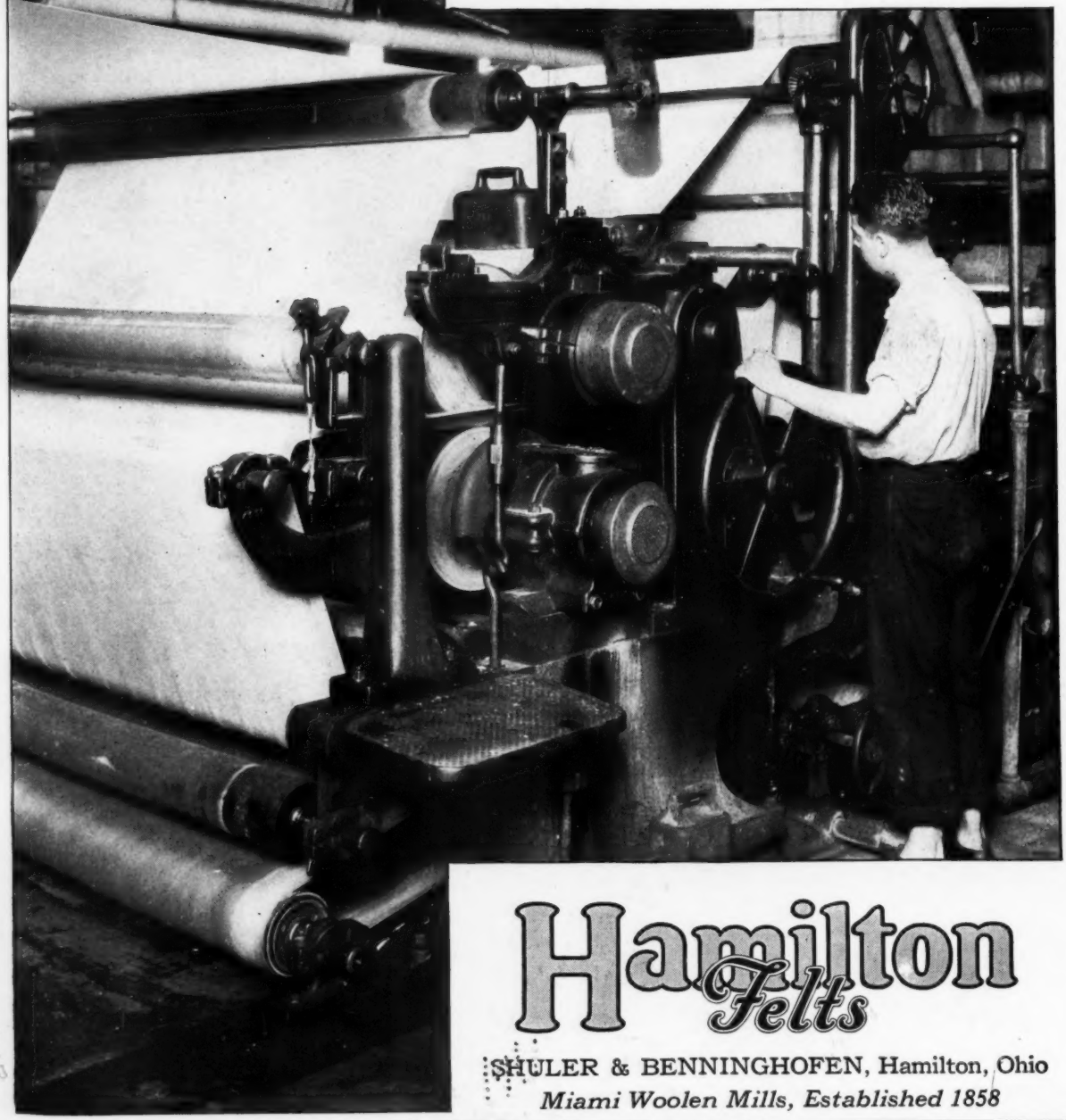

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PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-SECOND YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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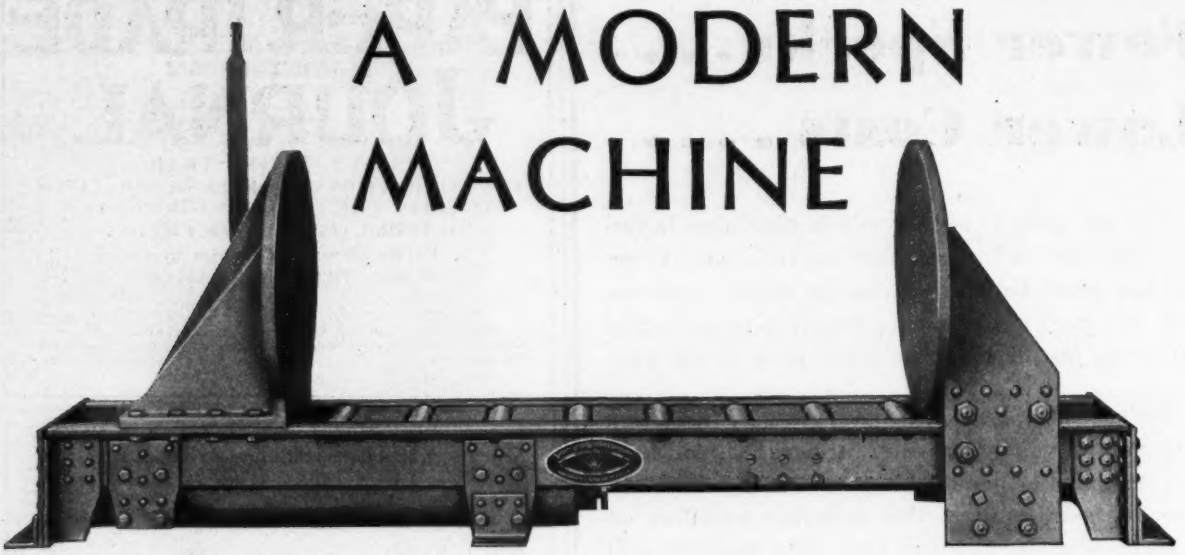
TABLE OF CONTENTS

Submits Draft of General Code for Paper	13
Marathon Mills Announce Wage Increase	14
Freight Rate Reduction Asked	14
Paper Chemistry Institute's Problems	14
Boston Market Conditions Improving	15
American Writing Sales Gain	15
Government to Use Less Twine	15
Eddy Paper Co., Winds Dermurrage Case	15
Chicago Market Displays Upward Trend	16
Paper Exhibit Attracts	16
Formulating Local Code	16
Warren Line Distributors	16
Paper Outlook Brighter in Toronto	17
Board Prices Go Up	17
News Print Manufacturers Hopeful	18
Straw Board Plant to Resume	18
Union Bag Reports More Orders	18
Philadelphia Trade Conditions Improve	19
Obituary	24
International Paper & Power Co., Report	24
Editorial	26
U. S. May Assist Herty Laboratory	27
To Affiliate with Robert Gair Co.	27
Eaton Paper Chartered	27
Technical Section	
Development of Method for Determining Foaming Tendency of Casein	29
The Trans-O-Meter for Measuring Colors	30
Operating Division Development Report	31
Pulp Testing Developments in 1932	32
Variations in Yield and Quality of Sulphite Pulp made of Spruce from Different Sources	36
Pulp and Paper Industry Literature Review	38
The Dirt Content of Chips	40
Text of President Roosevelt's Statement on Recovery Act Policies	41
Swedish News Print Production	42
Imports of Paper and Paper Stock	43
New York Market Review	45
Miscellaneous Markets	46
Market Quotations	47

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements 52-53

A MODERN MACHINE



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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XCVII, No. 1 Thursday, July 6, 1933

Submits Draft of General Code for Paper

S. L. Willson, president of the American Paper and Pulp Association, Sends Out Preliminary Form of Regulations for the Operation of the Paper, Paper Board and Pulp Industry Under the Industrial Control Act—Asks for Recommendations As to Wage Rates and Other Provisions of the Code Within the Next Few Days

S. L. Willson, president of the American Paper and Pulp Association, has just sent the following letter and tentative draft of the general Code for the paper, paper board and pulp industry under the National Industrial Control Act to all associations of primary manufacture:—

"Enclosed is a preliminary draft of the general Code for the paper and pulp industry. This Code is designed to cover the broad phases, labor and competitive conditions in the primary manufacture of paper, pulp and paper board. It relates particularly to that part of the industry that operates upon a continuous basis.

"The committee that assisted in the preparation of this draft felt that the establishment of a wage base for the industry required very careful consideration on the part of the groups, and that this association should furnish whatever information it had to the group associations which, together with their own data, would assist them in arriving at recommendations. The information available in this office is being prepared and will be forwarded to you in the near future.

Considering Wage Rates

"In considering wage rates, it is important to bear in mind that probably there will have to be a balance between the adjustment in this industry and other major industries. In addition, in the consideration of covering by price adjustments any wage level that may be agreed upon there must also be considered the effect upon paper consumption and in the facilities of the industry, and the resultant effect of these elements upon employment in the industry. The fact that basic wages in such industries as the steel industry and other key groups, have not been established as yet, makes this question one of vital importance.

"I would appreciate having your recommendations as to wage rates and as to the other provisions of this Code within the next ten days. When these recommendations are received, the committee that worked upon the preparation of this Code will consider all suggestions for submission at a meeting of the group chairmen for their final action.

"I am also enclosing a tentative draft of the Constitution and By-Laws of the reorganized Association. I would like your suggestions upon these also preparatory to submission to the group chairman for action."

GENERAL CODE OF FAIR COMPETITION OF AMERICAN PAPER AND PULP INDUSTRY

These provisions are established as a Code of Fair Competition for the branches of the paper, paperboard and pulp industry set forth in this paragraph (said branches being hereinafter collectively referred to as the "industry"), namely,

This Code shall become effective for the industry the second Monday after the date upon which it shall be approved by the President of the United States.

After the effective date hereof, the associations whose names are subscribed hereto, and their respective members, agree to conduct their individual businesses within the field of the industry pursuant to the provisions of this Code.

Article I—Employment

1. The minimum wage to be paid by employers in the industry to common labor, except apprentices, cleaners, outside labor, watchmen and semi-pensioners, in mill production operation, will be—

(a) Northern Zone, which shall consist of all of the territory of the United States except the States named in subdivisions (b) and (c).

Male labor ..... cents per hour.
Female labor ..... cents per hour.

(b) Central Zone, which shall consist of the States of Delaware, Maryland, Virginia, West Virginia, Kentucky, Tennessee and North Carolina, and the District of Columbia.

Male labor ..... cents per hour.
Female labor ..... cents per hour.

(c) Southern Zone, which shall consist of the States of South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas and Texas.

Male labor ..... cents per hour.
Female labor ..... cents per hour.

2. The maximum hours of labor for any employee paid on any hourly or piecework basis, engaged in mill produc-

(*Continued on page 20*)

Marathon Paper Mills Announce Wage Increase

Five Per Cent. Addition to Pay Rolls Will Benefit Two Thousand Employees at Rothschild, Wausau, Menasha and Ashland Plants—Production Now on Normal Basis, Following Marked Business Improvement—Green Bay Plants Operating Full

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 3, 1933.—In keeping with the government's plan for industrial recovery, the Marathon Paper Mills Company, last week announced an increase in wages of five per cent effective July 1. This addition to the pay rolls will benefit approximately 2,000 employees in the Marathon plants at Rothschild, Wausau, Menasha and Ashland, Wis.

Orders have held up well at all of the Marathon plants during the depression period, but such a marked improvement has been noted in the last few months that production is now on a normal basis. This company was among the first in Wisconsin to announce the wage increase.

Mills at Green Bay, Wis., are all reported operating at capacity. The Northern Paper Mills, of that city, is using four 6-hour shifts and has called back a number of employees who had been laid off when orders declined. Heads of these mills believe the present inflow of orders will keep up and that the recovery will be permanent. Depleted stocks of jobbers are being filled up in anticipation of a rise in prices.

With the adoption of the six-hour shift at the Interlake Pulp and Paper Company division at Appleton, Wis., last week, all mills of the Consolidated Water Power and Paper Company, including those at Wisconsin Rapids, Stevens Point and Biron, Wis., are operating under this plan. Tours start at 6 and 12 o'clock. Approximately 225 men are now employed at the Interlake division, about forty more than the peak payrolls of 1929. Day workers are employed for eight hours, five days a week.

Freight Rate Reduction Asked

Unless Wisconsin paper mills receive reductions in freight rates of approximately 25 per cent on their raw materials and finished products, they will find it necessary to use greatly increased water and truck transportation, according to a statement issued by the Wisconsin Paper and Pulp Manufacturers' Traffic Association to the Interstate Commerce Commission at Washington, D. C. The brief was filed in connection with the general investigation of rates and charges of carriers.

Reductions requested on raw materials would mean a maximum saving of $10 per ton in the cost of manufacturing certain products, and a saving of $2 per ton on finished products, the brief states, adding that these savings would be passed on to customers and consumers. It is a question of the railroads keeping the traffic they now have instead of losing it to trucks and boat lines, the association adds.

Paper Chemistry Institute's Problems

Problems encountered in establishment of the Institute of Paper Chemistry at Lawrence College, Appleton, Wis., were explained by Dr. Harry A. Lewis, of the Institute staff, in an address before the Kiwanis club of Appleton last week. The Institute started with half a dozen students sent in from various mills, he said, and scholarships had to be offered at first to attract young men. Now students generally are paying their own way. They must be graduates of colleges or universities and must demonstrate their ability to succeed in the technical field. More than 500 have applied for admission, but only a relatively small number are accepted each year. The speaker announced that a third building is to be added to the institute in the near future. It will house a complete paper mill in miniature. The Institute now has complete pulp mill facilities in one building, and one of the best technical libraries in the United States in another.

News of the Industry

Mills of the Marathon Paper Mills Company at Rothschild, Wis., were completely shut down for an hour last week when the main cable from the power plant blew out. A temporary cable was supplied and all departments resumed except the sulphite mill, which was back in operation the following day. This is the first mishap of this kind in the entire history of the mill.

Overheated driers caused a small fire and interruption of operations at the Northern Paper Mills, Green Bay, Wis. last week. Practically no damage was caused, and the machinery was quickly restored to production.

Success which the Nekoosa-Edwards Paper Company, Nekoosa, Wis., has had in introducing a line of fine writing papers was explained by Jerry Whale, of the company's sales staff, in an address to the Rotary club at Wisconsin Rapids last week. He showed samples of the new products, and referred especially to the offset and mimeograph brands and their popularity with the trade.

C. K. Boyer, manager of the Interlake Pulp and Paper Company, Appleton, Wis., has been honored with appointment as a member of the board of education of the city of Appleton. He is a former president of Appleton Chamber of Commerce and prominent in community affairs. He fills a vacancy caused by the resignation of T. H. Ryan, who has been made municipal judge of Outagamie county.

The marriage last week of Harold E. Pierce, Menasha, Wis., and Miss Blanche Marie Gosling, of Tiffin, Ohio, has been announced. The ceremony took place at Tiffin, and the couple left immediately on a wedding trip to the Black Hills, South Dakota. They will reside at Menasha. Mr. Pierce is superintendent of the wax department of the carton division of the Marathon Paper Mills Company at Menasha.

The Nicolet Paper Company, DePere, Wis., has awarded a contract to C. R. Meyer & Sons Company, Oshkosh, Wis., for the rebuilding of its concrete dam on the Fox river. About $28,000 will be expended and the work will be completed within several weeks. The dam will be completely repaired by putting a new concrete cap on the old dam, which is 250 feet in length. The work will be done by sections, with a crew of fifteen men.

Negotiations have been completed by the Menasha Mill Supply Company, Menasha, Wis., for the purchase from Herman J. Finder, of Chicago, of the building it occupied up to the time it was partially destroyed by fire. The company is now rebuilding the structure, and complete operation is expected in about three weeks, according to Fred M. Rosenthal, manager. The rebuilt structure will be 46 by 200 feet on the first floor, and 46 by 120 feet on the second floor. The second floor was almost entirely destroyed in the recent $15,000 fire, but the first floor suffered little damage. A sprinkler system is to be installed as a precaution against a repetition of the loss. Operations have been carried on in temporary quarters, utilizing machinery at the John Strange Paper Company.

Boston Paper Market Conditions Improving

Many Fine and Coarse Paper Manufacturers Withdraw Prices, Due to Unusual Rush of Orders —Several Kraft Wrapping Paper Mills Refuse Business for September Delivery—Box Board Moving in Good Volume—Paper Stock Continues Strong

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 3, 1933.—The half-year just ended was productive of a far greater volume of business for paper merchants and manufacturers than the corresponding one of 1932. A general increasing improvement has taken place. The summer dullness has not yet developed. To some it seems doubtful if it does develop at all this season, although, due to the hot weather and the approach of the Fourth, business has been a little less active during the last week. According to a feeling expressed in some quarters, there is an element of uncertainty in regard to prices, but the sentiment as a whole is one of confidence, with the trade looking forward to stabilization in time.

A number of meetings of the New England Paper Merchants Association and of committees of that body have been held of late on matters connected with national legislation. As has been noted previously in these columns, many mills have withdrawn prices, including both fine and wrapping paper establishments, so great has been the volume of orders. Some kraft mills at least, even now, are refusing business for September delivery, with a general tendency to withdraw prices. In some cases orders for prompt shipment will be accepted. They will sell paper, but only with the understanding that the price will be that current at time of delivery. As for as possible manufacturers will notify buyers the price two weeks before the time of delivery.

American Writing Sales Gain

The general betterment in fine papers continued. Highly favorable reports are heard from the American Writing Paper Company, whose sales of all types of paper in 21 days of June were more than 100 per cent greater than the corresponding period of 1932. Paper merchants around the Hub are generally optimistic over the increased volume of sales. One commented on the fact that while in the last part of the month the demand usually slowed down, it had not slowed down the current month-end. Bonds are moving actively, as well as ledgers. While mills manufacturing book papers are not flooded with orders, they are expected to be more active later, inasmuch as the public school systems will buy a large stock of books for the coming year. With less funds needed for public welfare purposes, more will be available for the purchase of new text books for the schools.

Wrapping paper business continued to improve, with prices tending upward. At one house it was stated that the volume of sales was about 20 per cent ahead of that of a year ago at this time. The same ratio of increase applies to specialties, such as drinking cups, fibre plates, etc. The price of paper napkins has advanced about 15 per cent and the trend of paper cans is towards increased values.

The movement of box board is favorable, with values well maintained, and a strong upward tendency, at least in one or two grades. Material used in the manufacture of shoe boxes is in considerable demand and the call for other lines is fairly good. It is understood that the big Haverhill plant has many orders ahead. Difficulty in securing raw material for the manufacture of boards is reported in some quarters.

While a substantial tonnage of paper stock has been shipped to consumers the last few weeks, the market still continues active on some commodities, such as low grade waste papers and roofing stock. A call for material used in the manufacture of book papers is anticipated when orders for textbooks are placed in large volume, as previously indicated. Paper stock is generally strong, although it is rumored that during the current week manufacturers are to cut the price of mixed papers. Somewhat conflicting reports are heard. One is that mills have difficulty in securing all the supplies needed. Another is that the high prices brought out a large quantity of mixed papers with dealers making no concessions. Mills bought, it is said, to build up their reserve stock, which they did, and are now in a position to dictate prices. One mill was "simply swamped with mixed papers" according to a statement in the trade. The current price of mixed papers is .60 @ .65. No. 1 kraft strengthened, and is now quoted at a flat 1.10, compared with a former range of 1.05 @ 1.10. The maximum figure for foreign gunny remains at 1.25, but domestic gunny advanced to 1.10 @ 1.15 from a former price of .90. No. 1 scrap burlap has risen to 1.00 from .90.

Government to Use Less Twine

One of the markets for twine, the United States Government, wll use less, according to an order just received here from the fourth assistant postmaster general. The order follows: "As a result of the reduction in the amount of money that may be expended for the purchase of twine and an increase in prices recently quoted, it again becomes necessary to call on all postal employees to exercise care in the use of twine. Many postmasters report that it is unnecessary to order new twine from the department, as they save enough from incoming mails to take care of the outgoing. Of course, it is obvious that all offices can not follow that practice, but the department is quite certain that with the cooperation of all employees, and particularly supervisors, a very material reduction can be made in the amount of new twine ordered."

Eddy Paper Co. Wins Demurrage Case

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 1, 1933.—The Eddy Paper Company won a bitterly fought demurrage case in Centerville circuit court last week. The court gave the Three Rivers concern a judgment for $15,217.95 against the New York Central and Michigan Central railroads.

The case concerned overcharges on demurrage on more than 10,000 cars and the judgment divides the shares the railroads must pay the company, fixing the New York Central cost at $3,600.25, and the Michigan Central overcharge to be refunded at $11,617.30. The company's attorney, Harry C. Howard of Kalamazoo, was aided by their traffic manager, A. G. Dettmer. The judgment covers overcharges during 1928, 1929 and part of 1930.

The Eddy company paid $35,000 to the carriers and filed a claim for what it considered overcharges. The railroads contended the case was one in which the Interstate Commerce Commission had jurisdiction and one phase of the court case was taken to the supreme court, where dismissal was asked. This was denied and the suit ordered to trial.

Chicago Paper Market Displays Upward Trend

Various Standard Grades of Fine Paper Continue in Good Demand—Request for Ground Wood Papers Persistent—Improved Conditions in Sulphite Bond Section Well Maintained—Paper Board Generally Moving in Satisfactory Volume

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 3, 1933.—The Chicago paper market continued on an upward trend during the past week. Paper jobbers were finding it more and more difficult to quote prices to customers as quotations changed with rapidity. Attention was divided between three highly important things—business improvement and increased orders, the codes of procedure under the Industrial Recovery Act and, finally, the provisions of the two per cent state sales tax which goes into effect July 1.

The kraft market continued to exhibit strength as the market firmed up in all lines. Board orders continued good and the price range indicated that buyers were jumping in for fear of higher prices. Fine papers had a good week, increasing prices bringing a "shake down" from buyers who had long held off. The sulphite bond market continued favorable. Books and covers held steadily and demand was reported to be expanding. Certain grades of ground woods showed actual increases in price and the demand for all lines was reported more firm. Mills continue more active than for many months past. Waste papers showed more activity, reflected in a series of higher quotations for various grades.

Executives of jobbing firms and mill representatives are harder to contact now than in many years, due to the calls on their time from business itself, from association efforts to code the industry and from allied problems that must be met and overcome.

Paper Salesmen Hold Golf Tourney

Included in the forty paper salesmen and guests who enjoyed the second monthly golf tournament of the Middle West Division of the Salesmen's Association of the Paper Industry, were about fifteen prize winners who deserve mention for their prowess over the difficult Sunset Ridge Country Club course. Leading the van is Courtney Reeves, Allied Paper Company, who banged out an 80-11 for a low net score of 69. And incidentally, the low net. P. G. Jones, International Paper, won the low net prize for handicaps of 17 and under while H. Frolich of International and I. McHenry of Mid-States Gummed Paper won honors in the 18 to 30 handicap class. Jack Hillyer of Whitaker won the low putts prize. The low putts foursome was composed of Warren Moore, Brown Paper Goods; Frank Prentiss, Hollingsworth & Whitney; Irving McHenry and Harry Todd, Lincoln Paper Company. The low net foursome was composed of Joe Heyer, Cherry River; Roger Little, Dwight Brothers; R. R. Cook, International Paper and Hank Frolich. Bert Fisher, Bergstrom Paper Company, won the prize for the lowest score on the par 3 holes while blind bogey honors were shared by Frank Prentiss; Horace Tracy, American Envelope; Carleton Smith, American Envelope and H. T. Johnson. The usual luncheon and dinner, followed by plenty of singing, finished out the day's program. The next golfing event is to be held at the North Shore Golf Club on Friday, July 21. The Association is still continuing its weekly luncheon meetings because of the extreme importance of daily business happenings, national and local. The division is also taking a great deal of pride in the Century of Progress paper display and in its successful efforts to back the display when most of the paper industry was saying, "it couldn't be done."

Paper Exhibit Attracts

With more than two and one-half million already classified as having seen the 1933 Century of Progress Exposition in Chicago, the paper industry will be pleased to know that a high percentage of this number have been drawn to the Paper Exhibit, to the paper making machine, and to the many individual displays of paper and paper products. Chicago newspapers have given paper an unusual news break, a strong indication that paper as an industry has remained in the background for so long that what it is—and does—is news. At the present time President Roosevelt's autograph is being watermarked into the hand made paper at the demonstration of 17th century paper making in the Paper Foundation's exhibit in the General Exhibits Group. This featured procedure is drawing crowds as well as the paper making machine, the House of Paper, and other exhibits of both general and individual interest. Plans are beginning to materialize for Paper Day, September 1.

Formulating Local Code

A committee composed of the officers and directors of the Chicago Paper Association is working hard on a local code of procedure to recommend to the National Paper Trade Association in plenty of time for the final arrangements to be made with General Hugh Johnson's office by July 15. Those on the committee are W. E. Beier; Walter Shulman; M. A. McNutly; William Chukerman; Leo S. Altholz; D. F. Peck and James S. Danehy. At the regular meeting of the association held on June 27, the organization as a unit worked with the above committee in a preliminary drafting of such a code. At the same time the association accomplished much of benefit to the local markets and showed a tendency, as a unit, to disregard the present State Sales Tax as "not applicable to the wholesale business." The members reported an excellent market situation and a real promise of even more improvement in the near future.

Engineers Signally Honored

Engineers from all parts of the United States, including many from the paper industry and from concerns manufacturing paper mill materials and machinery, were signally honored in Chicago this week. The past week has been Engineering Week in Chicago and at the Century of Progress Exposition with more than 10,000 taking part in "Engineer's Day"; the banquet of the Engineering Societies; the displays and other features.

Warren Line Distributors

According to an announcement from the Chicago Paper Company that concern is now the exclusive representative in this territory for S. D. Warren's line. Thus the complete Warren line is now available through one organization and stocked in quantity. The Warren line includes eleven grades of coated papers; thirteen grades of plain papers and four grades of litho papers. Chicago Paper states that "it realizes the necessity for adequate stocks, intelligent service and prompt delivery and accepts the responsibility."

Outlook Brighter for Toronto Paper Trade

Steady Advance Toward Normal Conditions Experienced, With Gradual Increase in Sales Anticipated in Many Quarters—Paper Mill Activity Practically Unchanged, With Operations Considerably Reduced—Demand for Fine Paper Irregular

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 1, 1933—June closed with slightly higher volume of sales in the wholesale paper trade and were it not for the fact that the summer vacation period is on now there would be greater confidence that a change for the better has actually arrived. In many quarters it is believed that the corner has really been turned and that there will be a steady advance toward normalcy with a gradual increase in sales. Certain it is that there is a decidedly better feeling in the trade with some buying for future needs and the paper merchant is feeling much better about the prospects for good business than he has done during the past year, due, perhaps, to freer enquiry rather than to a sizeable increase in actual orders, although these are coming in better now than for some time past.

There has been little change in mill activity. Sales forces of the fine paper plants are still having difficulty keeping the machines in operation and most of the mills are running at considerably reduced capacity. Demand for book, bond, ledgers and writings is suffering seasonably although some plants report good business of a spasmodic character, with one week producing satisfactory tonnages and the next somewhat flat. For the most part, however, manufacturers of fine papers find themselves optimistic and with a firmly rooted belief that the market is headed for a pick up. There is slightly less optimism in the coarse paper market where business is decidedly quiet. The paper converting trade has not yet staged its expected come-back and lines like envelopes and general stationery are still backward. On the other hand there is a fair call for blanks, manilas and Canadian-made blotting, while there has been a slight increase in business by the manufacturers of light weight papers, such as tissues and toilets.

Board Prices Go Up

New price lists on all lines of box board went into effect at the end of June. Patent coated is up $5 a ton and chip board has jumped $8, while white vat lined is up $6. Following are the prices now in force: plain chip board, non-folding, $44, was $36; pulp board, $51, was $45; white vat lined, $48.50, was $42.50; pasted chip, $50, was $42.50; folding chip, $48, was $40; pulp chip folding, $51, was $45; bleached manila, singles, $56, was $50; patent coated No. 1 news back, $75, was $75; No. 1 news center manila back, $85, was $80; No. 1 solid manila butter carton stock, $85, was $80; No. 2 news back, $65, was $60; No. 2 news center manila back, $75, was $70; No. 2 double patent coated $90, was $85. Prices are f.o.b. Toronto.

Paper Box Men Meet in Convention

Paper box manufacturers from Ontario, Quebec, and some from across the line, gathered in annual convention of the Canadian Paper Box Manufacturers' Association at the Bigwin Inn in the Georgian Bay district on June 26 and 27 under the chairmanship of George M. Hobart, and discussed various problems affecting the welfare of the industry. There was a twenty per cent increase in attendance over previous conventions. Discussion pretty much centered itself around the questions of cost control and production costs. Considerable less business was reported for the year and this was referred to in conjunction with likely higher prices for boxes, as now exists for board, as a very good reason why the greatest care should be exercised in the matter of quotations and production. It was believed that higher prices for the association's products would eventually follow the upward quotations for board which were annunced last week and the manufacturers were urged strongly to co-operate in the matter of costs and elimination of ruinous competition, keeping costs down to a minimum and adopting intelligent methods of estimating.

In addition to the round table conferences there was an interesting program of papers and addresses. D. E. A. Charlton, editor *Modern Packaging* discussed the subject "Selling the Modern Package," and Thornton Purkis, Toronto, well known advertising counsel, spoke on "Sterlingaria." C. V. Hodder, secretary-manager of the Canadian Paper Box Manufacturers' Association, presented some helpful hints in his address on "Basis of Estimating" and "Costs and Cost Control in the Paper Box Industry" was handled by Professor E. D. McPhee, comptroller of York Knitting Mills, Toronto. L. F. Winchell, vice-president Hinde & Dauch Paper Company of Canada, Ltd., gave a talk on "Board and Box Manufacturers" and Arthur S. Allen, color consultant, Toronto, gave an interesting talk on "Color Values."

There was a golf tournament for the Fielder trophy which was won by E. V. Brown, of the Galt Paper Box Company, with D. A. Smith, of Beaver Products, Thorold, as runner-up. Other items of entertainment included motor boat trips, the annual banquet, and dancing.

The new president elected in succession to Mr. Hobart is J. A. Northey, head of the Telfer Paper Box Company, Toronto, who has been an active worker in the organization since its formation. All of the other officers and directors were re-elected.

Firstbrook Boxes Increase Operations

Firstbrook Boxes, Ltd., Industrial street, Toronto, extensive manufacturers of paper boxes, report that they have increased the number of their operatives by 40 per cent since the first of the year. The company also reports a marked improvement in the volume of business. This has been especially evident during the past six weeks or two months. A longer working hour schedule has been placed in operation, which means, of course, that the employees of the company have now a better income. The Firstbrook company is optimistic about the future, and its executives state that they expect the dollar value to increase correspondingly with the rise in business volume in due time.

Burt Business Forms, another paper product firm, also report a marked improvement in business conditions. This organization has also increased the number of its employees, the increase being about five per cent. The executives of the company state that during the past few months business has taken a decidedly upward turn. During the depression the wages of factory employees remained at the same figures at which they were in 1929.

News Print Manufacturers Hopeful in Canada

Early Relief from Price Competition Looked for Through Concerted Efforts in United States Under National Industrial Recovery Act—Opinion Expressed That Measure Will Have Constructive Effect on North American Industry

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 3, 1933.—The fall in the premium on New York funds has not been regarded with enthusiasm by the news print manufacturers, as it is tantamount to a further slash in the price of the commodity they produce. Hopes still run high, however, for early relief in the matter of price competition through concerted efforts in the United States under the provisions of the National Industrial Recovery Act. While the general opinion is that this Act will have a constructive effect on the industry, an element of doubt enters into the situation, and is being voiced by the newspapers. These are speculating as to what measures, if any, will be taken to divert to United States mills orders that are now being filled in Canada. It is recognized that if measures are taken to bring production of United States news print mills up to 100 per cent capacity, and to import only news print which American mills are unable to produce, the situation in Canada may become worse instead of better. As against this, it is pointed out that sufficient quantities of pulpwood are not available in the United States, and that in all probability the immense supplies of raw material available to Canadian mills will operate towards holding for Canada the share of the American market which it now holds.

In this connection it is worth noting that the Quebec Government is encouraging the cutting of pulpwood by farmers, holding that there are prospects of better prices in the near future. Under the Government's plan some sons of farmers in the older parishes are being offered a premium of $100 a year for a period of three years if they will become colonists in selected forest regions. Colonization in the province of Quebec has always been built upon the fact that for the first five years at least the colonist has been able to depend for his livelihood upon the sale of the wood cut upon his lot. The slump in the price of pulpwood has of late years proved a hardship to these new settlers, but with better prices the whole situation will change, and a higher price for pulpwood will do more for colonization than any government grants can achieve.

Against a Monopoly

An article in the *Sault Ste. Marie Star* protesting against allowing the chaos in the news print industry to develop into the formation of a giant news print monopoly is being widely reprinted. The article says in part:

"The situation has gone beyond Ontario and beyond governments. Ontario and Quebec could do something to recover a little from the wreck, and to stop what is now aimed at—a burdensome monopoly.

"That is, they could if they could get the organized co-operation of news print users—the newspapers.

"The newspapers do not want sweatshop news print. They are not to blame for news print which is made below the cost of production, and which means starvation pay for paper mill men. There is only one group to blame for that—the gang that want to wreck everything and over the ruins erect a monopoly. These are aiming at mills bought for a song under the auctioneer's hammer from bankrupt owners.

"The Canadian Daily Newspapers' Association and the American Newspapers' Association have for years at their conventions urged the mills to get together, stabilize prices at a fair profit, and adopt a live-and-let-live policy.

"Every year these conventions deplore the news print industry's disorganization—nobody knows what to expect. During the war the publishers of Canada had to appeal to the Dominion Government to regulate the mills. They had run up the price of paper to $135 a ton, and half the dailies died between 1914 and 1924. The price now is from $36 to $40, though it is said there is paper being sold as low as $28. Apparently a fair price would be about $50 now.

"If Premier Henry, of Ontario, and Premier Taschereau, of Quebec, would ask for the co-operation of the publishers, a start would be made towards cleaning up a situation that if left unchecked will be another burden on Canadians. Canada now supplies two-thirds of the news print used in the U. S.

"There is jealousy between Ontario and Quebec. They have both bid for mills. But sanity should drive them together. At present Quebec is doing most of the business. A lot of Ontario papers are letting their own mills die and getting their paper from Quebec, thus helping to hurry along the coming debacle—a gigantic monopoly."

Straw Board Plant to Resume

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., July 3, 1933.—Operation of the strawboard factory at Mt. Vernon, Ind., with relief of unemployment as a major attendant factor, will be launched by the Alton Paper and Box Board Company, of Alton, Ill., as quickly as legal matters can be adjusted. The announcement was made by Joseph E. Kelly, Mt. Vernon, following advices from the Alton firm.

Robert W. Stevens, manager of the Mt. Vernon factory, was called to Alton late last week for a conference, relative to starting the plant. Following sale last December of the physical properties of the plant to the Graham Paper Company, of St. Louis, in foreclosure proceedings, Mr. Kelley as receiver during the period of redemption leased the factory to the Graham company, which in turn leased the plant, with a sales proviso, it is understood, to the Alton corporation.

Union Bag Reports More Orders

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., July 1, 1933—A new schedule went into effect this week at mills of the Union Bag and Paper Company, following a meeting at which the employees voted to work Sundays. A steady increase in the volume of orders is said to have resulted in the decision to lengthen the working schedules and incidentally the working force will also be enlarged. It is understood that production in both branches has increased considerably within the past few months with the result that a large number of the old employees have been recalled.

With the inauguration of the new schedule it is said that about 190 men will be employed steadily. Announcement was made by the company that prospects for further expansion of production are excellent.

Philadelphia Paper Trade Conditions Improve

Demand for Various Standard Grades of Paper Expands—Quotations Rule Generally Firmer —With Majority of Mills Closed Down Four Days During Holidays Demand for Paper Stock Falls Off Slightly, Although Prices are Well Maintained

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 3, 1933.—Improvement approximating and, in some instances, actually attaining prosperity continued as the dominant characteristic of the paper and allied trades during the week. Observers are of opinion that not only is the betterment marked but that it bears every evidence of a substantial and permanent character, having as its broad base greater demand and better prices in the commoner grades, both finished and raw material. Those observers are also of opinion that so far as paper stock is concerned, which, for the last few weeks has been in the leading position in the upward swing—this coming week will be one of great importance as showing just how well founded is the improvement. For, with the national holiday occurring just one day after the customary summertime week end holiday, most of the mills in this district had virtually a four-day close-down. Just how this cessation of consumption of raw materials will affect their future demand is a problem of interest. Most informed opinion is to the effect that it will be merely to temporarily steady a demand which, during the last month or more, has been growing almost daily.

While during the past week in the paper stock trade there were no further advances, outside prices now prevail for the entire line of paper stock but particularly of the common grades. It will be in this group that the effect of the mill close-down will be most evident. The better grades are still lagging a little in the march forward, and for that reason even though the common should during the week remain at present levels, a further advance of the higher grades of stock is anticipated.

There is but slight evidence in Philadelphia thus far of the intense competition among the packers of stock to secure volume, even though such attainment means the actual payment to printers, office buildings, engravers and other producers of stock, of actually higher prices than are current at the time of delivery. Elsewhere, reports coming to this city indicate, in their desire to accommodate the mills and in the belief that prices are so rapidly advancing, that a price to the customer of today higher than actual mill quotations is merely an anticipation of an advance, has produced a demoralizing effect. Up to the present time there is little evidence on the part of any of the larger stock dealers here engaged in an effort to steal the customers of competitors. Meanwhile, especially in view of the operation of the National Recovery Act, dealers are getting closer together, but so far an actual meeting for the purpose of formally effecting a close organization has not yet been called.

Coarse Paper Merchants Organize

The outstanding development of the week was the great addition to the membership ranks of the recently reorganized Coarse Paper Division of the Philadelphia Paper Trade Association. At its meeting last week there was reported the accession of nine additional firms, so that the coarse paper trade in Philadelphia is now virtually 99 per cent organized, and since the Fine Paper Division for some time has been, with a possible exception, completely representative of this branch, it can be said beyond all possibility of contradiction that the Philadelphia paper trade today is better organized than it ever has been in its long history. The additional members reported at the meeting held last week were the following: A. Goldman, Frank Dubin, W. J. Cairns, Charles Resnick, James Gallen, E. J. Basler, J. W. Witte, G. A. Bossler, Edward Wilson. Present at the meeting were thirty representatives of the twenty-seven firms now in the Coarse Paper Division. The new members were formally presented by Nathan Isen of the Enterprise Paper Company, who was largely instrumental in securing their applications for membership. While the gathering was one largely of a social character, commodity reports were presented by the chairmen of the several committees engaged in studying the situation. Consensus of opinion was that trade was very decidedly improving almost each day and that prospects were better than they have been for the last two or three years.

Wayne Shantz Wins Golf Cup

Another notable event of the week was the friendly contest on the golf links of the paper men and their customers —the printers and engravers—the seventeenth since this most enjoyable social event with just a little tinge of business, has been in existence. Arthur B. Sherrill, paper broker, leads the enthusiasts among the paper trade, with Hal Sorenson, of the Beck Engraving Company, a leader among their opponents. Interest centered in the contest for the Philadelphia Paper Trade Cup, and this year it was won by Wayne Shantz, who had 87 with 18 handicap, giving him 69 net, winning first prize as well as the Cup. Charles Labor was second with 92 and a handicap of 22, net 70. There were two ties for the 72—there being 72 first and 75 second; H. W. Haydock won; five tied for the 75. There were forty who teed off in the afternoon. It is of more than passing interest that in the seventeen years this cup has been contested for, it has never been won more than once by any individual. Under the conditions of its presentation it must be won three times by the individual before he retains permanent possession.

Paper Industry Gains

Improved conditions in the industry is centered in the figures presented by the Business Review of the Third Federal Reserve District, bearing date of July 1, and issued by the Federal Reserve Bank of Philadelphia. In the statistical table, the employment and pay-rolls in Philadelphia—the paper and printing industry as a whole show a gain of 1.4 for May, 1933, as compared with the preceding month; paper and wood pulp show a gain of 4.1; paper boxes and bags 2.2; and printing and publishing 0.1. Payrolls for paper and printing generally show a similar gain of 2.5; paper and wood pulp show a gain of 9.7; paper boxes and bags of 14.1, while printing and publishing show a decline of 0.3. The index numbers of individual lines of trade and manufacture in the Philadelphia Reserve District show a gain for paper and wood pulp of 12.1 for May, 1933 compared with a month before, while printing and publishing show a gain of but 2.6.

News of the Trade

The Philadelphia Paper Trade Credit Association will hold its next meeting at its headquarters in the rooms of the Typothetae in Philadelphia on July 11, but because of the critical illness of Chairman Douglass W. Bond, treas-

(*Continued on page 45*)

SUBMITS DRAFT OF GENERAL CODE FOR PAPER

(*Continued from page 13*)

tion operations in the industry except those employees in an executive or supervisory capacity or as watchmen, shall be eight hours per day, subject, however, to the following exceptions:

(a) Workers may be employed without regard for the provisions of this Code when necessary to protect property in case of fire, flood, or other Acts of God, or any emergency repairs.

(b) The time of workers spent in wash-ups, changing wires and machine clothing, or otherwise, while the mill (or the machinery in connection with which such workers are regularly employed) is not operating shall not be included in the permissible maximum hours of such workers.

(c) If, in order to comply with the provisions of this Code, with respect to maximum hours, it shall be necessary for any mill to go from a two to a three hour basis in machine operation, such mill shall have ninety (90) days after the effective date of this Code as a training period during which it shall be exempt from the above requirement as to maximum hours of employment with respect to the operation in question. Any individual mill may also be exempted from the above requirement as to maximum hours of labor to such extent and for such limited period as may be necessary to train additional employees in order to comply therewith or as may be necessary as a result of a local housing shortage, making it impossible to procure the additional labor necessary to comply with such maximum hours, provided that in any such case proof of such condition shall be furnished to the Executive Committee of the group or divisional association within whose jurisdiction the product of such mill shall fall.

3. Employees engaged in work of a character heretofore customarily paid for on an hourly or piece work basis in the industry shall not be exempted from the provisions of this Code with respect to maximum hours of labor by transferring such employees to a weekly or monthly payment basis.

4. All employees in the industry shall have the right to organize and bargain collectively through representatives of their own choosing and shall be free from interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection.

5. No employee in the industry and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing.

6. All employers in the industry shall comply with the maximum hours of labor, minimum rates of pay and other conditions of employment approved or prescribed for the industry by the President of the United States.

Article II—Production Control

1. It shall be a purpose of this Code to equalize production with demand. It is the intention of the American Paper and Pulp Association and of the divisional associations connected therewith to formulate detailed plans to accomplish such equalization.

2. Pending the adoption and approval of such plans, no manufacturer shall operate in any field of manufacture covered by this Code at a greater ratio than is sufficient to maintain its stocks of products manufactured for sale (after current shipments on bona fide orders) at a level not exceeding an amount equal in tonnage to the average of such of its stocks on the first day of the corresponding month during the years 1926 to 1929 inclusive, with due allowance for new capacity.

3. There shall be no increase in productive capacity with respect to products manufactured for sale falling within the field of this Code by installing new or additional paper or paperboard machines or pulp digesters or grinders, nor shall any manufacturer shift the production of an existing paper or paperboard machine to another product of the industry then being made by others but not theretofore manufactured by such manufacturer without (a) ten (10) days notice to the Executive Committee of the association of the group or division of the industry covering the product for the production of which it is intended to install such machine or to which such machine is to be shifted, and (b) a license therefore from the President of the United States.

This paragraph shall cease to be in operation as to any product falling within the field of this Code whenever the shipments of such product for a period of six (6) consecutive months shall equal ninety (90 per cent) of the existing practical operating capacity for the production of such product, as determined by the Executive Committee of the group affected.

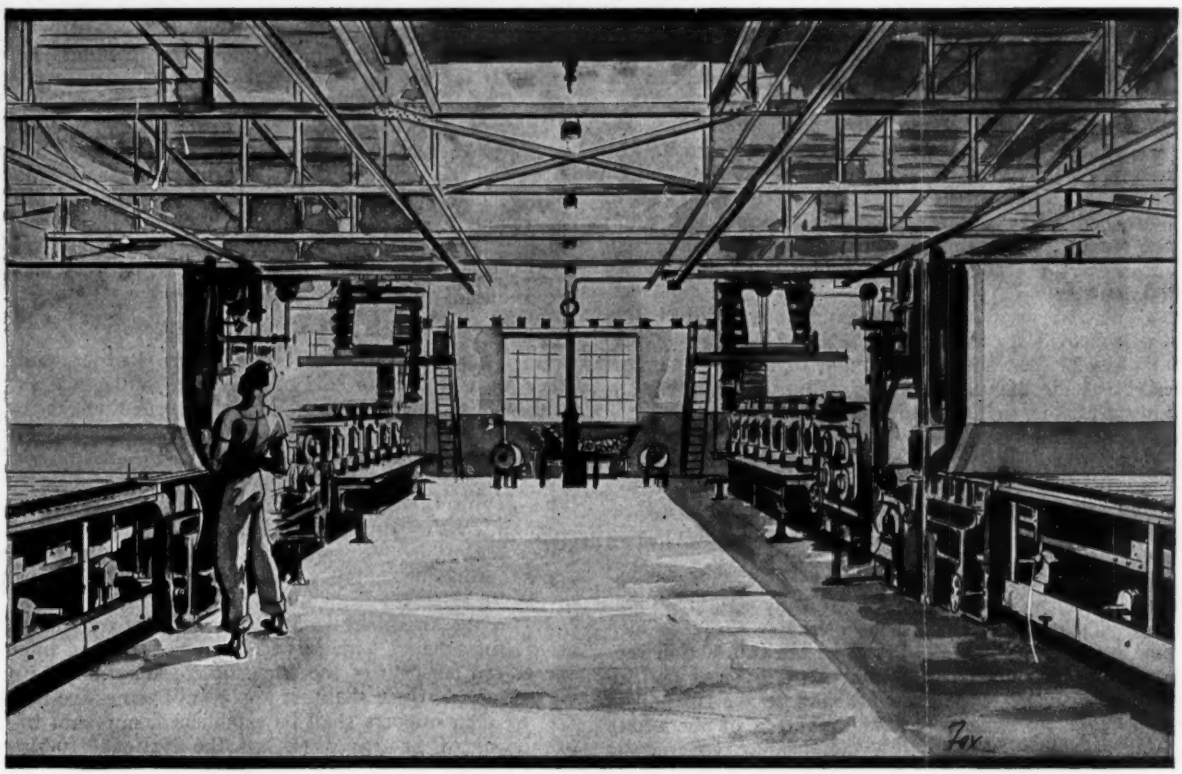
Article III—Conditions of Sale

1. The selling of any product except rejected or damaged merchandise or "seconds" and except in fulfilment of bona fide contracts existing June 16, 1933, below the average weighted cost as determined on the basis of uniform principles of accounting shall constitute unfair competition. "Cost" is defined as including all cost to the time of delivery to the buyer, including among other items all materials, waste and broke, cost of rejections, allowances and seconds, labor and overhead costs as well as all charges such as interest on capital invested, salesmen's, and agents' or brokers' commission, depreciation, depletion, obsolescence, and proper reserves. Rejected or damaged merchandise and "seconds" shall be sold on such uniform discount basis as may be established as customary by the group association within whose jurisdiction such product falls.

2. Basic principles for a comparative and uniform accounting will be adopted by the Association as soon as practicable, and when adopted will be used as the basis of determining minimum prices. To facilitate the determination and adoption of such uniform accounting, the members of the industry shall supply to the Executive Committee of the American Paper and Pulp Association such information as may be called for by such Association, subject to such regulations with respect thereto as shall be prescribed by the President of the United States.

3. Pending the adoption of such uniform accounting, the minimum selling prices of the principal products of the industry of the standard grades and weights shall be determined by the group or divisional associations, based on present knowledge of costs, and shall be set forth as a part of the subordinate codes to be presented by them.

4. The standard unit and sales basis, regular stock weights, sizes and substance numbers, making orders, finishing charges, wrapping and packing deductions or charges, color charges, and variations in quantity, weights, cores, waste, marking, shipping date, claims and terms, and all price differentials between products, quantities, qualities, or classes of customers, shall be governed as to each field



To MILL EXECUTIVES *who have* Plans *to meet the* Challenge *of* Low Prices

MODERNIZING or making over present paper machines to take fine paper orders at a profit requires careful planning. Plans laid before S & W engineers are kept confidential, receive benefit of the longest experience in this country on fine paper making machinery, and involve no obligation. Write, South Windham.

★ "Carrying the Torch" gives facts on S & W mill machinery, outlines the machines mentioned at the right and tells how even before installation ability to do the work required was guaranteed. Write for your free copy.

THE *two widest Fourdriniers in the world for making at lowest cost the finest tissue and condenser papers are Smith & Winchester designed and built.*

★

The SMITH & WINCHESTER *Manufacturing Company*

PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

6

of the industry by the trade customs of the group association having to do with said field which have heretofore been adopted or may hereafter be adopted (subject to the approval of the President).

5. Distributors, agents, brokers and other wholesale agencies and importers shall observe the minimum mill or minimum resale prices, if any, prevailing at the time of such sale, as determined by the character of the sale and as embodied in the subordinate codes of fair competition of the respective branches of the industry, and shall also be subject to the Trade Customs of the respective branches of the industry.

6. The making of incomplete, ambiguous and deceptive contracts provides a medium for making unfair and discriminatory prices, induces fraud and repudiation thereof, gives rise to disputes and disturbs stability in business operations and it is, therefore, declared that all contracts for the sale of products falling within the field of this Code shall contain a definite and true statement of the product covered, price, quantity, terms of payment, place of delivery, date, name of purchaser and all other items necessary to form a complete contract, and that all contracts so entered into shall be in conformity with this Code and performed in letter and spirit. It is further declared that in order to carry out the foregoing, all invoices shall contain a full statement of all facts necessary to make such invoice a full and complete record of the transaction represented on the face thereof, and such invoices and all books of record pertaining thereto shall be available at all times to such authorized officers or agents of the group association within whose scope the produce covered by such contract shall fall, or to an authorized accounting firm as may be determined by such association. Until submission and approval of the subordinate codes of fair competition of the respective branches of the industry, no manufacturer in the industry shall quote on any contract prior to thirty (30) days before the first delivery thereunder nor make such quotation at a fixed price for a period longer than ninety (90) days from date of quotation, and all quotations shall be for acceptance within not to exceed ten (10) days; and all contracts shall provide for price revision at least every three (3) months.

7. The following are declared to be unfair trade practices and are prohibited:

(a) The selling of goods below cost;
(b) Discrimination in price;
(c) Secret rebates;
(d) Mismarking, misbranding or misrepresentation of goods;
(e) Commercial bribery;
(f) Inducing breach of contract;
(g) False disparagements of competitors;
(h) Enticement of competitor's employees;
(i) Deliveries not conforming to sample or order;
(j) Blanket contracts;
(k) Contracts lacking mutuality;
(l) Special sales as a reduced price;
(m) Changing terms of contract;
(n) Deviations from standards;
(o) Dumping of surplus products;
(p) Making of false reports;
(q) Guarantee to sell below competitors' published or known price,

all as more specifically set forth in Exhibit hereto annexed.

8. The following are declared to be fair methods of competition and are hereby approved:

(a) The open publication of price lists and adherence thereto;
(b) Adherence to uniform contracts,

all as more specifically detailed in Exhibit hereto annexed.

9. The basis of quotations, whether f.o.b. mill or delivered, or otherwise, and freight or cartage allowances, zoning or the establishment of uniform quotations within zones and the standard of trade terms and cash discounts, shall be determined by the respective branches of the industry and included in their respective codes of fair competition.

10. Bona fide export sales shall be exempt from the provisions of this Article.

Article IV—General Conditions

1. Every contract, acknowledgment of order, and invoice with respect to sale of products falling within the field of this Code, shall contain a statement that the transaction covered thereby, and all terms and conditions thereof are in accordance with this Code.

2. Any and all amendments or alterations in or additions to this Code proposed by the industry shall require adoption by the vote of the membership of the American Paper and Pulp Association in accordance with its By-Laws, before the same shall be presented for the approval of the President of the United States.

3. In the manufacture of paper, paperboard and pulp, as to any product with respect to which foreign imports exceed ten per cent of the domestic consumption, the provisions of this Code shall not apply until protective regulation of such imports shall be established, pursuant to the provisions of Section 3 (e) of the National Industrial Recovery Act.

4. It is an express provision of this Code that the President of the United States may from time to time cancel or modify any order, approval, license, rule or regulation issued under the terms of the Industrial Recovery Act, or any of the provisions of this Code.

John Matthews, Jr., Resigns

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 5, 1933—John Matthews, Jr., assistant director of the Bureau of Foreign and Domestic Commerce since January 26, 1925 and chief of the Paper Division of the Department from August 1, 1922 until he became director has resigned effective July 15.

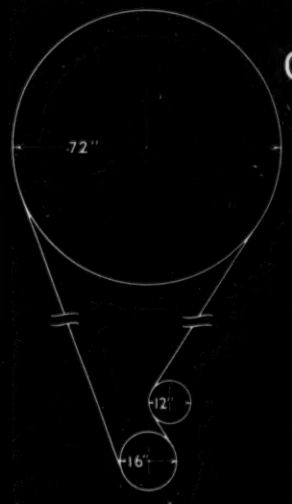
Mr. Matthews became connected with the paper industry shortly after leaving school, his principal business experience being in the export end of the industry. From 1912 to 1921 he was with the Parsons Trading Company as departmental manager in charge of purchases and sales of paper for the Far East, India, South Africa, West Indies, and South and Central American markets.

He spent three years in Buenos Aires as foreign manager of the Parsons Company, covering Brazil, Uruguay, Argentina, Chile and Peru and was actively engaged in the marketing of paper and machinery in those countries. On returning to the United States in 1921 he left the export business and was engaged as Eastern sales manager for the Miami Paper Company, West Carrollton, Ohio, from which position he went to the Department of Commerce.

George Butterfield Made Secretary

George Butterfield has been appointed secretary-treasurer of the Glazed and Fancy Paper Association, succeeding Leonard I. Houghton, resigned.

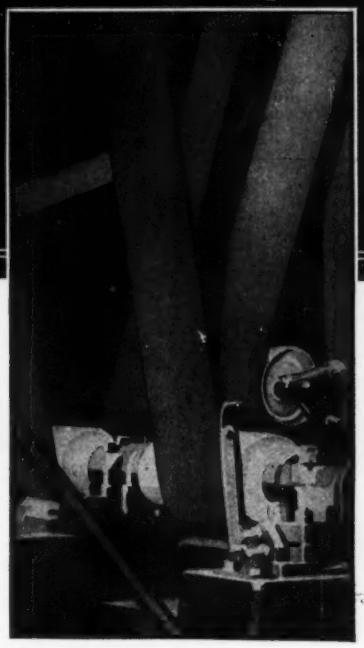
The Association announces that it has changed its headquarters from 146 Chestnut street, Springfield, Mass., to 280 Main street, Fitchburg, Mass.



G.T.M. SPECIFIED GOODYEAR COMPASS ENDLESS BELT

FOR IDLER-EQUIPPED BEATER DRIVE OF CHEMICAL PAPER MANUFACTURING CO., HOLYOKE MASS.

DRIVING PULLEY 16" IN DIAMETER—21" FACE AT 600 R.P.M. DRIVEN PULLEY —72" IN DIAMETER, AT 133 R.P.M. IDLER—12" IN DIAMETER. G.T.M.-SPECIFIED GOODYEAR COMPASS BELT, 20" WIDE, 36' 4" LONG, 12' C. TO C.



New LOW BEATER-BELT COSTS and the G.T.M.

THIS is the story of a new record low in belting costs on a hard, belt-eating drive.

It reveals the cost-cutting service of a Goodyear Compass Belt specified to its job by the G.T.M.—Goodyear Technical Man.

This belt was installed October 5, 1931, on an idler-equipped beater drive of the Chemical Paper Manufacturing Company, Holyoke, Mass. Its original cost was less than half the cost of previous belts used on this drive.

Those earlier belts had to be reconditioned every three months at a cost of $75 per belt each time they were rebuilt. The Goodyear Compass Belt already has delivered 19 months of trouble-free service and is still in good condition.

Are you interested in cost reductions like that for your plant? If you are, we earnestly recommend that you take up your belting, hose and other equipment problems with the G.T.M. His analyses of individual plant requirements, and the scientific construction of Goodyear Mechanical Rubber Goods, are resulting in lower operating and maintenance costs in large and small plants all over the world.

The G.T.M. will come to your plant and coöperate with your operating officials on request to Goodyear, Akron, Ohio, or Los Angeles, Calif., or your nearest Goodyear Mechanical Rubber Goods Distributor.

BELTS • MOLDED GOODS • HOSE • PACKING

Made by the
Makers of GOODYEAR TIRES

THE GREATEST NAME IN RUBBER

GOODYEAR

Obituary

B. A. Van Winkle

[FROM OUR REGULAR CORRESPONDENT]

HARTFORD CITY, Ind., July 1, 1933.—B. A. Van Winkle, age seventy-nine, president of the Hartford City Paper Company, died June 23 of heart disease while visiting the Century of Progress Exposition at Chicago with his wife. He was stricken on the grounds and was pronounced dead soon after by physicians in charge of an emergency hospital.

Mr. Van Winkle was born in Madison county, December 19, 1853. He attended public schools there, in Newcastle and Frankton and later taught in Madison county schools and at the State Normal School. He served as principal of Fortville public schools several years.

In 1878 he came to Hartford City and was associated in the drug, grocery and furniture business. He was editor and publisher of the *Hartford City Telegram*, a weekly newspaper, several years. In 1890 Mr. Van Winkle became an executive of the Utility Paper Company here and later had full charge of its branch plants in several Indiana cities.

In 1900, with Chicago business men, Mr. Van Winkle went to Chillicothe, Ill., where he operated a paper mill. In 1904 he returned to Hartford City and became general manager of the Hartford City Paper Company. He was an active member of civic and fraternal organizations. He was a vice-president of the Hartford City Rotary Club, a member of the Columbia Club in Indianapolis, a director of the Indiana Manufacturers' Association and a member of the board of managers of the American Protective Tariff League.

Mr. Van Winkle was prominent many years in the Republican party and had been a delegate to national conventions. He once was a candidate for lieutenant-governor and also for state senator.

In 1877 Mr. Van Winkle married Miss Emma L. Jarrett, who died in 1910. Later he married Miss Emma L. Clevenger, Indianapolis, and after her death married Miss Elta Curry, her niece, who with a grandson, Benjamin Anderson, survives. Other relatives include three sisters, Mrs. Ellie Mills, Lapel; Mrs. Rose Gushwa, Winnipeg, Canada; Mrs. Mary Wheitzel, Missouri, and a brother, Oren Van Winkle.

Fowler P. Stone

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 3, 1933.—Fowler P. Stone, president of the Mosinee Paper Mills Company, Mosinee, Wis., for many years, died last week at St. Mary's Hospital, Wausau, Wis., the city where he had resided most of his life. He had been in ill health for about two years and recently submitted to an operation from which he failed to recover.

Mr. Stone was one of the leading capitalists of the Wisconsin River Valley, and one of the organizers of the First National Bank of Wausau 51 years ago. He served as a director during that entire time and was its president for twelve years until its merger with another Wausau bank recently. He served as president of the Mosinee Paper Mills Company for a long period since its organization, but resigned two years ago when his health began to fail. He remained as a member of the board of directors. He also was one of the organizers of the Tomahawk Kraft Paper Company, Tomahawk, Wis., and served on its board of directors for many years. He also had extensive timber and lumber interests and was a director of the vast Virginia and Rainy Lake Lumber Company, of Virginia, Minn. Mr. Stone also was one of the organizers of the *Wausau Daily Record-Herald*, the Wausau Telephone Company, and the Wausau Canning Company.

For years, the decedent was a member of the board of trustees of Carroll College, Waukesha, Wis., and also had served on the board of education of Wausau. He was an elder of the Wausau Presbyterian Church for forty years and was recently made a life elder. Burial took place at Wausau, with Masonic services at the grave.

Mr. Stone is survived by his widow and seven children. One of them is Norman S. Stone, general manager of the Mosinee Paper Mills Company.

Charles Lancaster

INDIANAPOLIS, Ind., July 3, 1933.—Charles Lancaster, 65 years old, president of the Alexandria Paper Company, Alexandria, Ind., died recently at Neenah, Wis., of pneumonia, according to word received by E. W. Yule, general manager of the plant. Mr. Lancaster lived at Manchester, Vt. A few days before he had made a tour of inspection of the plant and then went to Wisconsin to visit friends. When H. H. Cook, brother of Mrs. Lancaster, died a few years ago in Atlantic City, Mr. Lancaster succeeded to the presidency. The widow and one son survive. Mr. and Mrs. Yule went to Neenah and accompanied the body to Manchester for burial.

International Paper & Power Co. Report

The International Paper and Power Company reports that consolidated gross sales in the first quarter of this year were $30,031,891 compared with $35,916,838 in the first quarter of last year; consolidated net revenue including other income, before charges, was $9,417,657 against $11,361,862; and a net loss of $2,239,073 after all charges including depreciation, compared with net loss of $399,567 in the first quarter of 1932.

Comparative consolidated statements are as follows:

	Quarter Ended March 31— 1933	1932
Gross sales	$30,031,891	$35,916,838
Net revenue, including other income	9,417,657	11,361,862
Less: Int. and disc. on funded debt, other int., income taxes, sub. divs., and amounts applicable to minority stocks of subsidiaries	9,291,535	9,450,970
Depreciation and depletion	2,365,195	2,310,459
Net loss	2,239,073	399,567

(In the above statement all figures have been stated at parity of exchange without adjustment of differences between foreign and United States funds. It is the practice of the Company to take into current operations any profit or loss on exchange at the time funds are actually transferred.)

In his remarks to shareholders, Archibald R. Graustein, president of the Company, says:

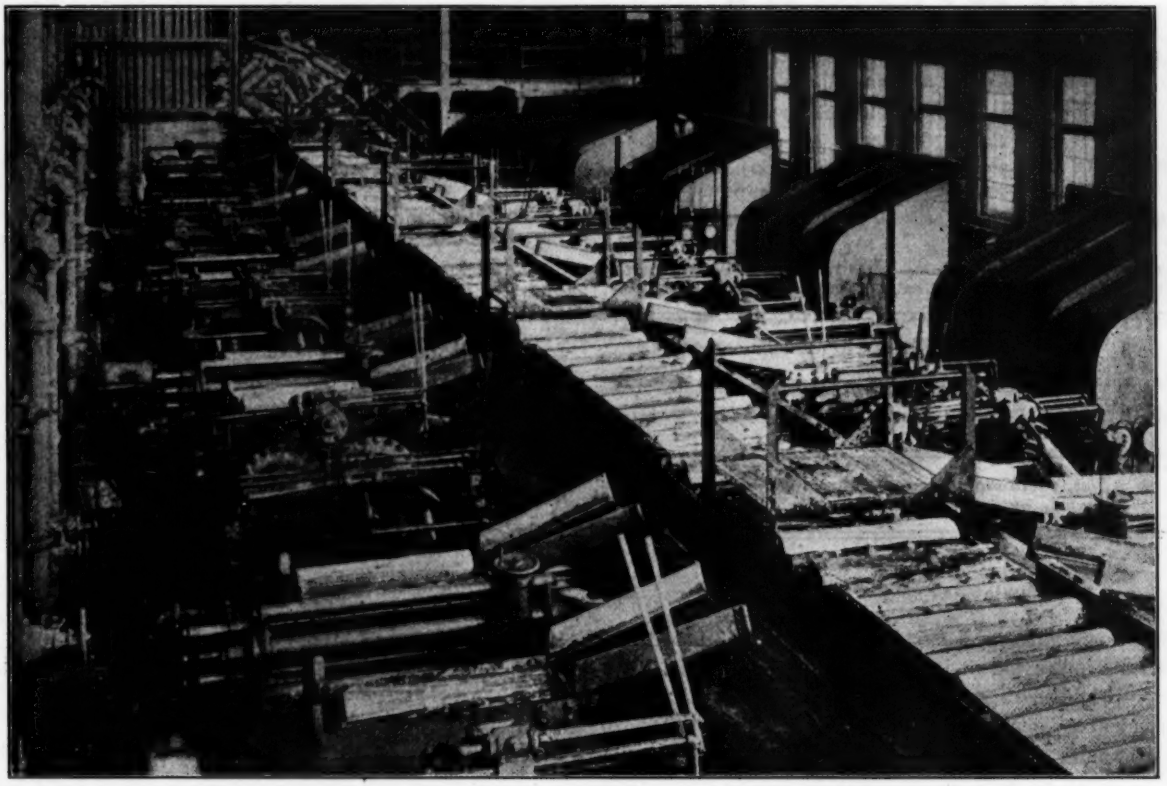
"During the first quarter of 1933, business both of the paper manufacturing and of the power producing subsidiaries showed further substantial declines, and operations for the period resulted in a net loss of $2,239,073 as compared to a net loss of $399,567 in the first quarter of 1932. Effective April 1, International Paper Company found it necessary to announce a temporary discount of $5 a ton from established news print prices in order to meet widespread price concessions which had been granted by competitors.

"Demand has recently been increasing both for power and for paper, and prices for almost all grades of paper except news print have been increasing.

"Subsidiary companies have continued the process of reducing outstanding indebtedness. Between January 1 and April 30, over $4,000,000 of floating debt was paid off and a small net reduction in funded debt effected. During the same period there was a substantial increase in cash and a small net increase in total net working capital."

The Great Northern Grinder

U. S. Patent No. 1757031



PARTIAL VIEW OF GRINDER ROOM CONTAINING 12 GREAT NORTHERN GRINDERS

POINTS OF OUTSTANDING ADVANTAGE

(1) PRODUCTION PER STONE—25 TONS AND UPWARD WITH 4-FT. WOOD

The large effective grinding area and method of feeding wood to the stone assure high production.

The efficiency of the operator is automatically checked.

Hazards are eliminated insuring maximum freedom of operation and security to the operator.

(2) MODERATE COST OF INSTALLATION

Cost of grinders including installation is relatively low.

No overhead filling loft is necessary; space occupied is less than for any other type of modern grinder, and where replacing 2 ft. grinders, existing building may be easily adapted to the new installation.

(3) LOW OPERATING AND MAINTENANCE CHARGES

Minimum operating costs are permitted by the high rate of production and by the ease of getting wood to the grinders.

The solid design and sturdy construction insure low maintenance costs.

New stones can be easily installed.

(4) DESIGN OF GRINDER ADAPTED FOR POSITIVE CONTROL OF QUALITY

The surface of the stone is easily inspected and accessible for adjustment.

Wood approaching the grinders is always in view for inspection, and wood is delivered to the grinder by a water conveyor, loose dirt and bark being removed in conveyor.

Automatic temperature controls are easily installed.

(5) WATER CONVEYOR AND VENTILATION

The water conveying of wood direct to the grinder contributes to a minimum of labor, power consumption, and maintenance expenses. It also is a vital factor in obtaining best quality.

Working conditions are healthy; the method of ventilating the grinder eliminates fog in the room even in the coldest weather.

We should welcome the opportunity of making, without obligation on your part, a study of your grinder problems.

MONTAGUE MACHINE CO.

Turners Falls, Mass.

PAPER TRADE JOURNAL
ESTABLISHED 1872

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RECORD PACE IN RECOVERY

Many well informed persons in January expected to see a definite improvement in business during the year. Few however, looked forward to such pronounced evidences of betterment as generally exist everywhere at the close of the first half.

"Measured by most of the standard indices, the current revival of business and speculative activity ranks not only as the most emphatic since the depression commenced but actually among the most spectacular in the entire history of the country," says the *Herald-Tribune*. "Since the middle of March production in the steel industry for example, has risen from a rate of 15 per cent of theoretical capacity to 53 per cent, a gain of approximately 250 per cent; car loadings have increased from 438,000 in the week ended March 11 to 605,000 in the week ended June 24, and output of electric power has expanded from 1,375,000,000 kilowatt hours in the week ended March 18 to almost 1,600,000,000 in the week ended June 24.

"The comparisons of these indices with a year ago are, if anything, more striking. When this movement began, steel production was lagging more than 40 per cent behind the same period a year ago; car loadings were running 23 per cent below last year, and electric power production was nearly 11 per cent under the 1932 level. The latest figures show steel operations 250 per cent above last year, car loadings 13 per cent higher, and power production 11 per cent higher."

Business recovery in the past three months is the most impressive ever made in a comparable period in this country, according to the monthly review issued by the National City Bank. The statement is based on figures of improvement over 1932 in steel mill operations, car loadings and electric power production.

"The upward movement of business has continued during June without interruption," the review states. "At this time of the year business men usually expect a summer recession to be well under way, but this rise is so vigorous that seasonal restraining influences thus far have had no effect. Operations have been stepped up steadily in the industries, and despite the increases in output and shipments their unfilled orders are holding at very satisfactory levels.

"In most lines the backlog is sufficient to keep mills and factories going for some time, and little is now heard of the expectations of a substantial summer decline, which were entertained in many quarters a month or more ago. On the contrary, as the season advances with the news continuing good the time in which a recession might be looked for is correspondingly shortened.

"Within a few more weeks the crops will be moving, and considering the improved farm prices there is reason to hope that the fall rise in trade will be a substantial one, bolstered by a greater farm purchasing power than has been present in the past year or two.

"Over the three months since the improvement began industrial activity shows an unbroken expansion. With the exception of construction work and lines particularly dependent upon construction and equipment, operations are generally the highest in about two years, and in some industries, notably the textiles, it is necessary to go back into the boom period to find the comparison.

"Of course these increases in production and trade are generating purchasing power at an encouraging rate. The industries are giving more employment and in many cases at better wages. From April to May there was an increase of 5 per cent in factory employment and of 11 per cent in pay rolls, according to the Department of Labor, and these figures contrast with the usual seasonal movement, which is downward. During June further increases undoubtedly have occurred, and according to published estimates by the American Federation of Labor more than 1,600,000 workers have been reemployed since the end of March."

TECHNICAL ASSOCIATION PAPERS

The sixteenth series of Technical Association Papers has just been issued by the Technical Association of the Pulp and Paper Industry.

This publication of 572 pages, the largest volume ever issued by the association, is a mirror of the great advances that have been made in the industry during the depression. It is heartening to note that such progress has been made in the face of the financial difficulties that prevailed. It is evidence that the technical man is in the saddle and that the industry has sufficient faith in its future to continue to support research. The benefits are sure to be far reaching in their effect.

One portrait only is included in this year's Papers, namely, that of the late Thomas J. Keenan, first secretary-

treasurer of the association and former editor of *Paper*, combined with the PAPER TRADE JOURNAL in 1925, who did much to bring the association through its first years of existence.

A large part of the publication is devoted to the discussion of the many subjects presented at the various symposia conducted by the association at its national meetings. These discussions are published only in Technical Association Papers and are as valuable as the papers presented at the meetings.

A review of the contents would be a review of the entire subject of paper manufacture expressed in terms of the most recent practice and in the trends being followed by all branches. The Technical Association is obviously retaining its leadership in the industry and it is gratifying to note that other organizations are not slow to follow this leadership and to keep their membership acquainted with the progress being made.

It is not so many years ago that technical men were considered to be purely theoretical in outlook but a review of the progress made during the past ten years has demonstrated that early theories quickly become routine practice. The infiltration of technical brains into the industry has had a wholesome effect and it is evident that the sound future of this great industry is assured and the wastes of the earlier years gone forever. The industry owes much to the Technical Association for the benefits received through the publication of its papers.

Paper Demand Expands in Indiana

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., July 3, 1933.—Demand for paper continues upward in this territory, particularly all those grades which have to do with industrials or are in demand by them. Of course, all grades showed improvement. Perhaps the most encouraging thing to the fine paper market is the announcement that the post office department will permit two cent postage on letters for city delivery. It is believed this ruling will cause more direct-by-mail business particularly by department stores.

From all sections of the state come reports of factories out of production for two or three years starting up or buying new machinery preparing for an early resumption. Orders are piling up particularly in the board factories, more men are being employed and more raw material being purchased.

Temperatures, which broke all existing June records for continuous torridity, caused the best June business for years in summer specialties. For seventeen days during the month the thermometer was 90 degrees or better, mostly better, and the rush for the open was unanimous. Container demand from the ice cream trade jumped and volume for napkins, paper towels, plates and tissues leaped upward.

An indication of the need for stocks in some lines was seen at the Zimmer Paper Products Company. A call came from a customer in Chicago saying the need for a certain product was imperative that day. No deliveries could be made in the ordinary manner, so Karl Zimmer, being air-minded and owning an airplane himself, loaded 500 pounds in his own machine and had his pilot make the delivery via air.

At last the paper stock men have encouragement in a big way. Stock prices continue to bound upward.

U. S. May Assist Herty Laboratory

"Allocation of more than $100,000 from reforestation appropriations was understood in official circles last night in Washington to have been recommended to President Roosevelt for experiments in making paper from Georgia pine," says the Savannah *News*.

"The allocation was said to have been recommended to the President by the forest service with strong likelihood that he would approve it. No final decision will be made, however, until the chief executive returns from his vacation.

"Senator Russell of Georgia has held several conferences with forestry officials about the proposal, but he said last night no decision had been reached and it would require executive order by the President to carry out his plan.

"Extended experiments have been carried on for some months in Savannah in the use of Georgia pine for making paper pulp, but no state funds now are available to carry on the work.

"Dr. Charles H. Herty, with his staff of assistants at the Georgia Pine Paper Laboratory, have accomplished marked advances in the manufacturing processes in recent months. Only this week the manufactured product was used on the high speed press of the *Evening Press* and sent to the Georgia Press Association meeting in Rome as a sample of what Georgia pine can produce.

"The plant was made possible originally by a grant of $50,000 from the Chemical Foundation, and operation was made possible in 1932 and 1933 by grants of $20,000 from the state. This year the legislature passed grants of similar amounts for the plant's operation in 1934 and 1935, at the time the experiment had proved enough. Considerable uneasiness was felt at this veto, but assurances have been received from time to time from other sources that the plant would not be permitted to remain idle.

"The announcement of likelihood of the federal government furnishing the sum of $100,000 for the continuation of the experiments is probably the most interesting feature in some time pertaining to the laboratory.

"Only recently the leading paper manufacturers of the United States and Canada came to Savannah, saw the plant in operation, and marveled at its advance."

To Affiliate With Robert Gair Co.

Formation of the Syracuse Container Corporation, to take over the business of Delavan Corrugated Box, Inc., of Syracuse, N. Y., and the Seneca Fibre Products Company of Skaneateles, N. Y., was announced last week. The newly formed company is affiliated with the Robert Gair Company, Inc., which operates paperboard mills at Piermont and Tonowanda, N. Y.; New London, Conn.; Haverhill, Mass., and Bogota, N. J.

This affiliation is expected to put the Syracuse Container Corporation in an unusually advantageous position with respect to its supply of raw materials of the several grades and varieties required for its production of corrugated and solid fiber products.

Eaton Paper Chartered

[FROM OUR REGULAR CORRESPONDENT]

PITTSFIELD, Mass., July 3, 1933.—The Eaton Paper Corporation has been incorporated with a capitalization of 11,675 preferred shares and 38,074 common shares having no par value. The president has not yet been elected. Incorporators are John R. Tobey, treasurer, Pittsfield, Foster E. Allison and Charles J. Winkler, Jr.

FOR PAPER MILLS which use reclaimed pulp, the

SNOWHITE PROCESS

for DE-INKING, DE-FIBERING waste paper . . .

You'll find this process an innovation in the paper industry because Snowhite

- **ELIMINATES** the use of steam or hot water, eliminates shredding
- **RESULTS** in larger yields of stronger, cleaner, whiter and more uniform stock
- **EFFECTS** a substantial saving per ton by requiring less power, labor and heat.

Paper Mills are requested to write for information regarding the application of this economic, efficient process.

American Cyanamid & Chemical Corporation

535 Fifth Avenue, New York

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Development of Method For Determining Foaming Tendency of Casein*

By C. W. Richards[1] and L. W. McFail[2]

Abstract

A method for the evaluation of casein for foaming tendency is presented and its accuracy and relation to mill performance is discussed.

Introduction

One of the most serious difficulties encountered in the use of casein sized coating mixtures is that of foam with resulting pinholes and inferior surface of the coated paper. It is known that caseins vary in foaming tendencies; the foam being formed largely by the agitation of the coating mixture necessary at various stages in the process, with the acidity of the casein itself in some instances a contributing factor.

Some of the basic causes of this foaming may be unknown but it is known that the methods of manufacture affect it as well as the nature and amount of alkali used in cutting; the nature of the pigments used in the coating; and the concentration and temperature of the coating mixture.

A method of measuring the foaming tendency due largely to the casein itself is highly desirable. This method is based on the supposition that the foam formed by agitation of coating mixtures all made of the same pigments, at the same concentration and temperature, the casein being cut with the same percentage and kind of alkali will depend on the foaming tendencies of the caseins used.

It was felt that rather than attempt to relate the foaming tendency of caseins in solutions of casein alone to the foam in finished color it would be more advantageous to measure it in coating mixtures of known and controlled composition prepared under standard conditions.

Development of Method

Five lots of casein were obtained whose performance in the mill, as regards foaming, was known. Coating mixtures prepared from these were tested, covering as many variables as possible until the present method was chosen as giving results most nearly in line with actual mill performance.

General Description

The method is applied to a laboratory prepared coating mixture which is made as nearly as possible by the same procedure as used in mill practice. The casein is cut and added to the pigment-water slip; the whole worked into a smooth coating mixture of about the same consistency as mill mixtures; agitated under controlled conditions; and the amount of foam produced measured.

Details of Method

1. PREPARATION OF CASEIN SOLUTION.

The casein is cut at 45 deg. C. with 10 per cent soda ash, in the ratio of 5 parts water to 1 part casein by weight. It is allowed to stand for 2 hours after cutting to eliminate the foam formed during the cutting.

2. PREPARATION OF COATING MIXTURE.

100 grams of a clay chosen as standard for the method is slipped with 100 cc. of water by mixing with a spatula. To this is added 66 grams of casein solution as prepared above and the whole is mixed carefully with a spatula into a smooth coating mixture, care being taken not to whip the material. This is allowed to stand for one hour to eliminate any foam formed during the mixing, with occasional gentle stirring to keep the clay in suspension. The temperature is maintained at 25 deg. C. throughout.

3. PROCEDURE.

The weight of 100 cc. of the above coating mixture is taken to the nearest tenth of a gram.

200 grams of the mixture is weighed into a 400 cc. low form beaker and agitated with a stirring disc which is 1 inch in diameter, ⅛ inch thick, rotating at 2700 r.p.m. The top of the disc is placed ¾ of an inch below the surface of the mixture in the center of the beaker.

The mixture is agitated for 2 minutes, allowed to stand 1 minute and the weight of 100 cc. of the agitated mixture is taken to the nearest tenth of a gram.

The difference between the weights of 100 cc. of the

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933. Contribution of the TAPPI Coating Committee.

[1] Chemical engineer, Oxford Paper Company, Rumford, Maine.

[2] Assoc. member TAPPI, research chemist, Oxford Paper Company.

unagitated mixture and 100 cc. of the agitated mixture is the foam index.

The difference between the weights of 100 cc. of the unagitated mixture and 100 cc. of the agitated mixture is the foam index.

During agitation air is beaten into the coating mixture and some of it is held there in the form of minute bubbles, the amount held depending largely on the nature of the casein and to some extent on factors previously mentioned. Since air is lighter in weight than the coating mixture and the final agitated mixture consists of air plus coating mixture, a given volume of it will weigh less than the unagitated mixture. The difference between the weight of 100 cc. of original mixture and that of an equal volume of the agitated mixture is a measure, therefore, of the volume of air or foam formed by agitation and held, in terms of the weight of coating mixture displaced.

Correlation with Mill Performance

This method has been applied to a large number of caseins subsequent to its adoption and the foaming tendencies of these same caseins later studied in actual mill use and by this a fairly satisfactory correlation between the method and actual performance has been obtained. The results show in general that casein with a foam index of 15 grams or less will give very little foam trouble in the mill while one having an index of 35 grams and over is usually very troublesome. Some exceptions have occurred, one especially which, though it gave a low foam index, did give trouble in the mill. This casein had a very high total and free acid, however, and it is probable that in actual mill use the foam formed during cutting was so great that it was carried on through the process since the standing time of 2 hours used in the test procedure is not always available in mill practice. The test procedure being such as to overcome this possibility by allowing elimination of all foam in the original mixture would make it unsuited for this type of casein. The method can probably be arranged to cover this by preparing a separate coating mixture promptly after cutting the casein and comparing the specific weight of this with that of a coating mixture prepared by the procedure previously outlined.

Thus a casein would have two foam indexes; one for foam capable of being caused by agitation, and one for foam traceable to high acid.

Accuracy

The accuracy of this method has been found to depend largely on the speed of the stirring disc. The particular speed used was chosen as showing the widest differences between caseins. At a slower speed many caseins show no foam and at higher speed all caseins foam excessively and approach each other. With proper care duplicate tests should check at least within 10 per cent. Although 10 per cent is not comparable with the accuracy obtained in ordinary quantitative analysis it is sufficiently close to differentiate between caseins. Although the method is purely empirical it has aided materially in mill operation and resulted in decreased cost of anti-foam agents.

Acknowledgement

Permission by the Oxford Paper Company to present this method is gratefully acknowledged.

Petition Against Avery Paper Corp.

An involuntary petition in bankruptcy, according to press dispatches, has been filed against the Avery Paper Corporation, of Sandusky, Ohio. The plant, it is stated, has not been in operation for some time.

The Trans-O-Meter For Measuring Colors

There is an increasing tendency to determine certain characteristics of materials of various sorts by light transmission tests. For example, if print paper is too transparent, printing and pictures will show through on the opposite side and make reading difficult. To take another illustration, the quality wanted in a liquid will often depend on its transparency. The quantity of matter in suspension in a liquid may make it either too transparent or not sufficiently transparent for the purpose for which the liquid may be intended.

These light tests may be made with a newly created instrument, which is known as a Trans-O-Meter. This apparatus consists principally of a Photronic (a copyrighted name used to designate the Photo-electric cells and devices manufactured exclusively by the Weston Electrical Instrument Company) Cell, a rheostat, a lamp, a filter, a microammeter and a glass container. The assembled apparatus has a lamp in one end of the box and a Photronic Cell in the other end. A tube connects the chamber containing the Photronic Cell. This tube has a sliding section through which the substance being measured can be placed into the path of the light rays. The amount of light passing through the sample substance is transformed into electrical energy by the Photronic Cell and measured by the microammeter. The cell output may be adjusted by means of the rheostat.

Here are several suggestions for using the Trans-O-Meter.

(A) For testing the transparency of paper samples, take a piece of paper whose opacity has previously been measured, and use this as a standard. Place this sample in the machine and then adjust cell output until a reading of 100 per cent has been obtained. Next place the unknown pieces of paper in the instrument one at a time and read the transparency of each in terms of the standard. The standard ought to be placed in the Trans-O-Meter between each reading so as to make sure that the line voltage has not changed enough to vary the light output of the lamp.

(B) To make a trichromatic test of the color of liquids, place the standard liquid in the Trans-O-Meter. Then obtain readings on the amount of light transmitted when the three different color filters are placed one at a time. Use one of these as a reference for holding lamp voltage constant and check against it between each reading. After this place the unknown liquid in the machine, and get readings on it with each of the filters. Be sure to go back to the reference standard and filter occasionally to check the line voltage.

The filters used in this test are the Wratten tricolor filters in "B" glass, 2 inches square. A lamp voltmeter may be used advantageously. The manufacturer of the Trans-O-Meter will furnish terminals for this purpose when desired.

The lamp is a regular house type of lamp. One should be used which will give enough light for the measurement to be made. The Trans-O-Meter will take any lamp of 60 watts and under. It is vastly less expensive to keep on hand a supply of lamps of various wattages than to keep a supply of instruments of various sensitivities.

A Correction

In the obituary of Edwin Riley printed in the PAPER TRADE JOURNAL of June 22, F. A. Riley, a grandson, who is a prominent member of the Technical Association, was mentioned as among the survivors. Mr. Riley's correct name is E. A. Riley.

Operating Division Development Report*

By Frederic C. Clark,[1] Chairman

Many of the important developments during the past year have pertained to improvements in quality of product and economy of operation. This applies throughout the entire manufacturing processes of the Operating Division.

In the *preparation of fibrous materials* there has been an improvement in chipper design by which chippers are directly connected to motors and mounted with anti-friction bearings, which has made it possible to secure a more uniform setting of knife to bedplate, resulting in more uniform chips with less slivers and sawdust. The use of Stellite, a special steel, for the edges of chipper knives and bedplates has greatly increased the wear and life.

Improvements have been made in rebarkers and knot saws, chip screens, and chip crushers. Improvements made in bark presses include renewable bronze liners designed to permit water to be more easily removed.

In the *manufacture of ground wood* or mechanical pulp the important developments have been the artificial pulp stone that has resulted in production of a more uniform pulp, as the artificial stone requires less burring, which means less variation in the quality of stock produced.

A weightometer has been developed and is in use in several American and Canadian mills, which makes it possible to weigh logs as they pass along the conveyor belt. An accuracy of 2 per cent is claimed.

The development of fractionating devices for testing ground wood pulps is opening up an important field of study that undoubtedly will result in the production of a more uniform ground wood pulp.

In the *sulphite* or acid pulping field, the combustion of sulphur is being studies by the use of a spray type burner. This development should be important as it makes it possible to produce sulphur dioxide gas of practically theoretical concentration and without the formation of any SO_3.

A new pyrites burner is being studied and the results so far indicate that it will make available sulphur at low cost. One of the most important developments in the sulphite field is the development of circulating systems, which will result in securing a more uniform temperature throughout the digester and result in less over and undercooked pulp.

Carbon bricks and special metal linings are showing considerable promise in replacing the usual ceramic type of brick, with indication that it will result in a material reduction in the lining cost per ton of pulp due to the long life of such a lining. In the bleaching of sulphite pulp, a great improvement has been made with the commercial development of gaseous or water chlorination as the first stage of the bleaching operation. The development of three stage bleaching has resulted in material improvement in the final product, with an increase in yield and decrease in bleach consumption.

In the alkaline pulping field emphasis has been placed on the recovery of chemicals used. Three recovery processes have assumed importance:—The Wagner System, the Goodel Method and the Champion Method. The first two are of the spray type while the last named is a modification of the Swedish rotary kiln.

Advances have been made in the bleaching of alkaline pulps particularly by the use of chlorine gas in a multiple stage procedure. Further material improvements in this method of bleaching are anticipated during the coming year.

In the *non-fibrous materials,* the developments have been the introduction of new sizing systems that eliminate the usual cooking of rosin with soda ash, and the introduction of sodium aluminate by which it is possible to size paper more nearly at the neutral point.

In the *preparation of half stuff,* attention has been paid to the development of equipment for converting pulp from dry bale form into slush stock. This has resulted in one new pulper, capable of handling sixty tons a day of sulphite pulp into slush stock. Developments are under way in connection with the continuous preparation of stock to replace the beater in the preparation of many grades of paper. It is believed that the development in equipment of this type is going to result in great benefit to many paper mills. The agitation of stock in stuff chests has been given considerable attention this year and the results indicate that it will be possible to secure more thorough agitation and mixing at lower H.P. consumption.

In the *manufacture of paper,* it has been found advantageous to rubber cover suction rolls, which adds to the wire life, and has seemed to have improved somewhat the water removal from the sheet. The use of these rubber covered suction rolls has been of material benefit to the board machine as it has been found advantageous to replace the old solid iron primary rolls with these suction rolls. This development with the development of so-called "extractor rolls" has made it possible to secure an improvement in the water removal at the wet end of a board machine. The development in new screens and improvements in the centrifugal type of screen are showing a direct benefit in the reduction of the amount of dirt, resulting in an improvement in the finished paper.

An important development in the Fourdrinier machine makes it possible now to shake the Fourdrinier wire at two points—at the old breast roll as formerly, and at a roll approximately half way between the breast and couch rolls. This development eliminates the shaking of any of the table rolls and makes it possible to shake the Fourdrinier wire at these two points at speeds of at least eight hundred strokes per minute, the device being so arranged that the shake at these points may be run independently and at different speeds and lengths of stroke.

The development of spiral bevel gears is of importance and replaces the old wood filled mortise gears. This new type of all metal gears adds materially to the steadiness of operation of the paper machine without which high speed and steady production is not possible.

The principal development in the *finishing processes* has been the introduction of anti-friction bearings on super calenders, platers and other types of finishing equipment, resulting in an increase in production as well as decrease in horse-power.

I might add further that considerable attention is being given to spray coating with the possibility that this may eventually be done directly on the paper machine.

The development of molded pulp containers, by which pulp is molded into any size and shape of container should be important for the paper industry as it will enable the production of food containers now made of tin and glass. This may easily develop into a very large new use of pulp.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.

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Pulp Testing Developments in 1932*

By Donald E. Cable[1]

During the year 1932 the world has had a "bumper crop" of technical articles in the field of pulp testing. Curtailment in tonnage output of pulp and paper for this year as compared with the previous years with corresponding reduction in average days of work a week for the average mill may explain why the chemists in many instances have found it possible during this interval to contribute rather more generously to the general pool of technical information by way of trade publications. On the other hand many technical men who are fortunate enough to find themselves still employed are compelled to devote as many and often more hours a week in active service for their employer than in previous years, due to assuming greater responsibilities on account of reductions in technical staff personnel.

Perhaps a more probable reason for this moderate increase of activity in the publication of pulp testing articles is to be found in a growing emphasis being placed on the buying and selling of pulp according to specifications or to the exercise of more rigid technical control in mills producing pulp for local or outside consumption.

At the end of this discussion is found some 93 references to contributions for the year, relating to chemical, physical or physical chemical tests for pulp characteristics. It would be presumptuous on the part of the writer to attempt an appraisal of these articles from the standpoint of quality or merit, since he has read but part of them completely and the rest in the form of brief abstracts as published in PAPER TRADE JOURNAL or "Chemical Abstracts."

Of the ones fully read the following eight appear to be of outstanding importance and each should certainly be read by the chemist or engineer in any way interested with regard to the subject involved:

1. "The characterization of pulps and stuffs" by Baird and Doughty (See bibliography attached for "Pulps and Stuffs"—Class 2000)
2. "Some recent research on pulp qualities" by Campbell (Class 2000)
3. "Analysis of raw materials. XII.—Wood Pulp" by "Paper Mill Chemist" (Class 2000)
4. "Further notes on the hydration of cellulose in papermaking" by Strachan (Class 2225—Imbibitional)
5. "Routine control testing—the British standard method of sheet making applied to mill work" by Bradshaw (Class 2228.1—Strength)
6. "Studies on various methods for determining cooking degree and strength of pulp (1932)" by Bergman (Classes 2291 and 2294—Beatability and bleachability)
7. "Flobility and springback of pulp and board" by Brown (Classes 3110 and 4141—Flobility and Springback)
8. "The relation of sheet properties and fiber properties in paper. IV. The use of structural concepts in pulp evaluation and paper design" by Doughty (Class 5300—Structure properties)

Pulp Testing in General

The first and third references present in a brief and up to date manner the more important physical and chemical tests commonly applied to wood pulps. Each gives the reader an admirable grasp and perspective as to the relative significance and importance of each test described.

References two and four go rather deeply into the fundamental and partly speculative aspects of the physical structure of a cellulose fiber. The latter sheds considerable light upon physical changes of a fiber caused by beating. It is a masterpiece of research and will undoubtedly be regarded as a milestone in the progress of reducing the art of papermaking to a science.

British Sheet Making Procedure

The fifth reference represents a commendable forward step in overcoming a serious handicap in the original British sheet making procedure, by expediting the test sheet drying operation by blowing warm air through the drying rings which are placed in a double stack arrangement within a box which receives the blown air on one side and permits its escape with moisture from the sheet on the other.

Beater With Controlled Bed-Plate

An excellent and painstaking piece of research was published during the year in Finland as a 143-page book (paper covered) by G. K. Bergman. Those interested in seeing a systematic comparison of four bleachability tests (Bergman number, Enso number, Tingle chlorine factor and Bjorkman number) and also tests for cellulose and lignin as applied to 14 strong sulphate, 6 easy bleaching sulphate, 20 strong sulphite, 6 easy bleaching sulphite and 2 hardwood sulphite pulps should not fail to read this report (No. 26) from the Central Laboratory of the Finnish Industries.

The most interesting section, however, of this report from the writer's point of view has to do with the use of the 1½ pound Valley beater as compared with large and small Lampén single ball mills in the strength testing of various pulps. Considerable data are shown graphically, indicating that most sulphite pulps and all sulphate pulps beaten to a freeness of 75 degrees Schopper-Riegler in the beater were found to yield test sheets of higher breaking length and bursting area than was obtained from similar pulps beaten to 75 degrees Sch. R. freeness by means of Lampén mills. The tearing strength values from the Lampén milled sulphite pulps was higher in all but one case than that of the corresponding Valley beaten sulphite pulps. For sulphate pulps the tearing strength values averaged about the same by the two methods of processing.

One term used by Dr. Bergman seems unwisely chosen. His expression for bursting strength is given as "bursting area." Judging by his formula for calculating results, square meters appears in the numerator and square centimeters in the denominator. The area units therefore, cancel each other, yielding a simple numerical factor free of any association with length or area except for the area within the clamping ring which is arbitrarily chosen.

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* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.

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Strictly New Pulp Tests

To R. B. Brown goes the distinction during the past year of having "coined" two new words for use in measuring certain physical characteristics which he calls, "flobility" and "springback." At the annual meeting of TAPPI in February, 1932, he presented a paper which gives his definitions for these two terms and details as to his methods for measuring such characteristics of pulp. These tests are particularly helpful in measuring certain changes in the physical behavior of fiber as influenced by beating or refining operations.

Pulp Strength Qualities and Testing Variables

Unquestionably the most thorough mathematical treatment of the complex system of variables involved in the testing of pulp for such empirical strength characteristics as breaking length, bursting strength, tearing strength and folding endurance as revealed in print during the year is to be found in the above contribution by Doughty which should require no introduction to members of TAPPI, since it was published in the September 8, 1932 issue of PAPER TRADE JOURNAL as the fourth contribution resulting from the TAPPI-APPA research fellowship at the U. S. Forest Products Laboratory.

APPENDIX

Below is found a list of references on pulp testing methods as taken from the technical literature for the calendar year 1932. In presenting this bibliography use has been made of the numbering system of classifying test methods for paper making materials as published by Baird and Doughty in the December 15th, 1932 issue of PAPER TRADE JOURNAL (pages 32-34). This plan of using arbitrary numbers as an aid in the filing of abstracts, reprints, clippings or pamphlets relating to the testing of all kinds of paper-making materials is heartily recommended to those in the paper industry responsible for the establishment or maintenance of a technical library or information service. There happen to be eight references on the subject of pulp testing which do not seem to fit into the Baird and Doughty list of topics and sub-topics in its present form. These will be found at the end, arranged in what seem to be suitable classes of subject matter.

1932 PULP TESTING REFERENCES

Class 1510—Chemical Properties of Wood

COHEN, W. E. AND H. E. DADSWELL
Chemistry of Australian timbers. I. Study of the Lignin Determination.
Council for Scientific and Industrial Research, Australia. Pamphlet No. 22 (1931)—27 pp.

Class 2000—Pulps and Stuffs

ANKER, CHR.
Apparatus and methods for testing wood pulp and paper pulp. Papir-J. *19*, 69-71 (1931); C. A. *26*, 4714

BAIRD, P. K. AND R. H. DOUGHTY
The characterization of pulps and stuffs. Paper Trade Jour. *95*, No. 24, 30-34 (Dec. 15, 1932)

CABLE, D. E.
Pulp testing committee report. Paper Trade Jour. *94*, No. 22, 38-39 (June 2, 1932)

CABLE, D. E.
Pulp-testing developments in 1931. Paper Trade Jour. *94*, No. 25, 27-30 (June 23, 1932); Tech Assoc. Papers XV, 279-82 (June, 1932); C. A. *26*, 5204

CAMPBELL, W. B.
Some recent research on pulp qualities. Pulp and Paper Mag. of Canada *32*, No. 6, 172-75, 206 (Feb. 11, 1932)

HERITAGE, C. C.
The problem of classification of chemical pulps. Paper Trade Jour. *95*, No. 23, 41-44 (Dec. 8, 1932)

KORN
Advances in pulp and paper testing in 1931. Zellstoff und Papier *12*, 112-14 Papier-Fabr. *30*, Tech.-wiss. Teil 329-32; Wochbl. Papierfabr. *63*, 185-7 (1932); C. A. *26*, 4468.

"PAPER MILL CHEMIST"
Analysis of raw materials. XII.—Wood Pulp. The Paper-Maker and British Paper Trade Jour. *84*, No. 4. TS275-77 (Oct. 1, 1932)

Class 2110—Moisture

ANDERSEN, A. C.
Apparatus for measuring the moisture content of mechanical wood pulp. U. S. Pat. 1, 821, 605 (Sept. 1, 1931)

BERNDT, K.
Quick method for the determination of the water content of fibrous materials. Zellstoff Papier *11*, No. 8, 466 (Aug. 1931)

KNOPFF, M.
Determination of water in paper, pulp and halfstuff. Wochbl. Papierfabr. *61*, 416-8 (1930); C. A. *26*, 3665

OGURI, S.
Hygroscopic moisture of cellulose. VII. Hygroscopic moisture of bamboo cellulose J. Soc. Chem. Ind. Japan *35* (Supp. Binding) 239-244 (June, 1932).

Class 2111.11 Youtz-Lauer Xylene Distillation—Moisture

ANON
Determination of moisture in pulp laps, wood chips and sawdust by xylene treatment. Tech. Assoc. Papers XV, 387-8 (June, 1932); Paper Trade Jour. *95*, No. 1, 40-1 (July 7, 1932)

Class 2132—Resins

SCHWALBE, C. G.
II. Distribution of rosin, ash and reducing substances in pulp sheets. III. Determination of rosin and fat in pulp sheets by emulsification. Papier fabr. *30*, Tech.-wiss. Teil, 151-58 (1932); C. A. *26*, 4712

Class 2140—Other Tests—Non-Fibrous Components

ALFTHAN, H.
Practical experience with the reddening of sulphite pulp. Papier-Fabr. *30*, Tech.-wiss. Teil, 282-3 (1932); C. A. *26*, 4714.

ANON
Water Solubility of wood and pulp. Paper Trade Jour. *94*, No. 16, 41 (Apr. 21, 1932); Tech. Assoc. Papers XV, 128 (June, 1932); C. A. *26*, 3664

Class 2210—Chemical Tests—Fibrous Component

ANON
Determination of methoxyl groups in wood or pulp. Paper Trade Jour. *94*, No. 18, 44 (May 5, 1932); Tech. Assoc. Papers XV 200 (June, 1932); C. A. *26*, 4714

PHILLIPS, MAX
The quantitative determination of methoxyl, lignin and cellulose in plant materials. J. Assoc. Official Agr. Chem. *15*, 118-31 (1932); C. A. *26*, 2395

Class 2211—Cellulose

DRAGONE-TESTI, G.
New microchemical method for the separation of cellulose from plant membranes. Chem. ind. agr. biol. *8*, 326-7 (1932); C. A. *26*, 6124

HAWLEY, L. F. and A. G. NORMAN
The differentiation of hemicelluloses. Ind. Eng. Chem. *24*, 1190-4 (1932); C. A. *26*, 6124

KAWATA, Z.
Analysis of pulp for rayon. J. Soc. Chim. Ind. Japan *35* (Supp. Binding): 174 (1932); Abs. in Paper Tr. Jour. *95*, No. 19, 39 (Nov. 10, 1932)

Class 2211.1—Cross and Bevan Cellulose

HANSEN, R. B.
The chlorination of wood pulp. Paper Trade Jour. *95*, No. 3, p. 30-32 (July 21, 1932)

Class 2211.11—Alpha Cellulose

WILLETS, W. R.
Determination of Alpha-cellulose in unbleached pulps. Paper Trade Jour. *94*, No. 7, 149 (Feb. 18, 1932); C. A. *26*, 2589; Abs. in—Paper Trade Jour. *94*, No. 20, 25 (May 19, 1932)

Class 2211.12—Beta Cellulose

PATERNO, E.
Oxycellulose and its identity with *beta* cellulose and cellodextrine. Atti, accad. Lincei *15*, 20-6 (1932) C. A. *26*, 4946

Class 2212—Lignin

HAWLEY, L. F. and E. E. HARRIS
Synthetic lignin. Ind. and Eng. Chem. *24*, 873-5 (1932); C. A. *26*, 4947

KULLGREN, C.
Liberation of ligninsulphonic acid from sulphited pulp. Svensk Kem. Tid. *44*, 15-23 (Jan., 1932); C. A. *26*, 4948

SARKAR, P. B.
Chemistry of Jute lignin. I. A comparative study of different methods of isolation. J. Indian Chem. Soc. 8, No. 7: 397-405 (July, 1931); Abs. in Paper Trade Jour. *94*, No. 8: A43 (Feb. 25, 1932)

Class 2212.1—Lignin—Sulphuric Acid Method

PETERSON, C. J.; A. W. WALDE and R. M. HIXON
Effect of temperature on sulphuric acid method for lignin. Ind. Eng. Chem., Anal. Ed. *4*, 216-17 (1932) C. A. *26*, 3109

RITTER, G. J.; R. M. SEBORG and R. L. MITCHELL
Factors affecting determination of lignin by 72% sulphuric acid method. Ind. Eng. Chem., Anal. Ed. *4*, 202-4 (Apr. 15, 1932); C. A. *26*, 3109

Class 2213—Pentosans

KLINGSTEDT, F. W.
Determination of pentosans in pulp. Pappers-Travarutidskr Finland *1931*, 950-4; Chimie & Industrie *27*, 1399 (1932); C A. *26*, 4713.

Class 2214—Extractives

NODDER, C. R.
The determination of solubility number: a micro method for measuring the extent to which a cellulosic material has been chemically modified or degraded. J. Textile Inst. *22*, T416-24, T464 (1931); C. A. *26*, 1436; Brit. Chem. Abstr. 1931 B:1042; Paper Trade Jour. *94*, A32 (Mar. 24, 1932)

SAKURADA, I.
A new method for the characterization of cellulose preparations through solubility differences. J. Soc. Chem. Ind., Japan *34*, Suppl. binding 426-7 (1931); C. A. *26*, 2587

Class 2216—Ash

(See reference to C .G. Schwalbe in class 2132)

Class 2221.1—Color

ANON
The "Blancometer". Pulp and Paper of Canada *33*, 254 (July, 1932)

EDGE, S. R. H.
The Blancometer and its use. World's Paper Trade Rev. *98*, 1907-8, 1946-49 (Dec. 16, 1932)

VAN ARSDEL, W. B.
Color specifications in the pulp and paper industry. Paper Trade Jour. *95*, No. 6, 32-5 (Aug. 11, 1932); C. A. *26*, 5417

Class 2221.13—G. E. Recording Color Analyzer

BEARCE, E. F. and R. G. MACDONALD
Recording color analyer (Gen. Electric). Paper Trade Jour. *94*, No. 10, pp. 36-37

Class 2222—Dimensional Characteristics

DITTRICH, K. and W. BOOS
The screen analysis of mechanical pulp. Wochbl. Papierfabr. *63*, Sondernummer 23A, 31-7, 498-501 (1932); C. A. *26*, 6126

HART, J. S., H. R. PATTON and H. W. JOHNSTON
The classification of pulp by selective screening. Pulp and Paper Mag. of Canada *32*, 252-7, 270 (Feb. 25, 1932); C. A. *26*, 2589; Abs. in Paper Trade Jour. *94*, No. 20, 25 (May 19, 1932)

KLEM, PER
Flour in wood pulp. The Paper Maker and British Paper Trade Jour. *83*, No. 3, 116TS-119TS (Mar. 1, 1932)

KLEM, PER
The new "research flour tester" and some experimental results. Papierfabr. *30*, Tech.-Wiss. Teil 109-12 (Mar. 6, 1932); Paper-J. *19*, 224-8 (1931); C. A. *26*, 3918

SOMERVILLE, J. L.
Tentative standardization of a fractionating screen for coniferous mechanical pulps. The Paper-Maker and British Paper Trade Jour. *83*, No. 3, 119-126TS (Mar. 1, 1932) World's Paper Trade Rev. *97*, 263-70, 304-8, 347-52, 390, 393 (1932); C. A. *26*, 2591; Paper Trade Jour. *94*, No. 20, A26 (May 19, 1932)

Class 2222.1—Length of Fiber

BROWN, R. B.
Fiber length effect on pulp and sheet properties. Paper Trade Jour. *95*, No. 13, 27-9 (Sept. 29, 1932); C. A. *26*, 6126

DOUGHTY, R. H.
The relation of sheet properties and fiber properties in paper. III. The effect of fiber length on sheet properties: Preliminary experiments. Paper Trade Jour. *94*, No. 9, pp. 29-34 (Mar. 3, 1932); Tech. Assoc. Papers XV, 137-142 (June, 1932)

Class 2223.11—Specific Volume of Fiber Substance

FILBY, E. and O. MAASS
The volume relations of the system cellulose and water. Can. J. Research *7*, 162-77 (Aug., 1932); C. A. *26*, 5414

Class 2224—Structure

BRITISH ELEC. and ALLIED INDUSTRIES RES. ASSN.
X-Ray examination of papers and pulps. World's Paper Trade Rev. *98*, 1393-94 (Oct. 28, 1932)

CAMPBELL, W. B.
Some recent research on pulp qualities. Pulp and Paper Mag. Can. *32*, No. 6, 172-75, 206 (Feb. 11, 1932)

HERZOG, A.
Microscopic testing of wood cellulose. Kunsteide *13*, 203-6, 239-43, 275-80, 311-20 (1931); C. A. *26*, 1773

Class 2225—Imbibitional

STRACHAN, J.
Further notes on the hydration of cellulose in papermaking. The Paper-Maker and British Paper Trade Jour. *83*, No. 3, TS133-TS141 (March 1, 1932)

Discussion—*Ibid 83,* No. 6, TS211-TS221 (June 1, 1932); *84,* No. 1, TS229-TS233 (July 1, 1932)

Class 2228.1—Strength

ANON
Testing pulps for strength. Wochbl. Papierfabr, *62* 830-4 (1931); C. A. *26,* 3375

ANON
Testing pulp for strength. Wochbl. Papierfabr, *63* No. 17: 323,324 (Apr. 23, 1932); Abs. in Paper Trade Jour. *95,* No. 13, A34 (Sept. 29, 1932)

BRADSHAW, F. W.
Routine Control testing—the British standard method of sheet making applied to mill work. Pulp and Paper of Canada *33,* 481-4, 518 (Dec., 1932)

COTRALL, L. G.
Laboratory sheet making for strength tests. World's Paper Trade Rev. *97,* 85-88 (Jan. 8, 1932) C. A. *26,* 3375

POSSANNER VON EHRENTHAL, B. and N. WINDJU
The effect of the proportion of fines in mechanical pulp on the strength. Papierfabr. *30,* Tech-wiss. Teil, 375-80 (June 5, 1932)

POSSANNER VON EHRENTHAL, B.
Strength testing Papierfabr. *30,* Tech-wiss. Teil., 158-70 (March 27, 1932); C. A. *26,* 4712

PRIOR, P. H.
Pulp evaluation. World's Paper Trade Rev. *97,* 90-92 (Jan. 8, 1932) C. A. *26,* 3375

Class 2291—Beatability

BERGMAN, G. K.
Report XXVI—Studies on various methods for determining cooking degree and strength of pulp (1932). (Published in booklet form in Helsingfors, Finland, by the Central Laboratory of the Finnish Industries)

HARRISON, H. A.
Laboratory beating of bamboo pulp. World's Paper Trade Rev. *97,* 229-30 (Jan. 15, 1932); Abs. in Paper Trade Jour. *94,* No. 18, p. 31 (May 5, 1932)

JONAS, K. G. and P. SCHLECHTER
The beating action of the hollander. Wochbl. Papierfabr. *63,* Sondernummer A23, 42-6 (1932) C. A. *26,* 6128

Class 2291.11—Using 1 Pound Valley Beater

BORONOW, P.
The design and care of pulp strength testing equipment. Paper Trade Jour. *95,* No. 24, 27-29 (Dec. 15, 1932)

LUETTGEN, A. J.
Pulp testing in a wrapping-paper mill. Wochbl. Papierfabr. *63,* 146-7 (1932); C. A. *26,* 3917

Class 2291.2—Pebble Mill Treatment of Fiber

PETERSON, F. C. AND F. MAKARA
Pulp—consistency variables in pebble-mill tests. Paper Trade Jour. *94,* No. 14, 35-8 (Apr. 7, 1932) Tech. Assoc. Papers XV, 157-160 (June, 1932) C. A. *26,* 3107

Class 2291.3—Lampen Mill Treatment of Fiber

POSSANNER VON EHRENTHAL, B.
Meeting of the strength testing committee of the (German) Society of Pulp and Paper Chemists and Engineers, April, 1932. Papierfabr. *30,* Tech-wiss. Teil, 354-9 (1932); C. A. *26,* 6130

Class 2292—Disperse Viscosity

OKADA, H. AND E. HAYAKAWA
Viscosity control in sulphite cooking. Cellulosechemie *13,* 97-100 (1932); C. A. *26,* 6127

WERNER, K.
Comparison of the viscosity determination on linters and pulps and the acetyl cellulose produced therefrom in relation to the acetylation process. Cellulosechemie *12,* No. 12; 320-28 (Dec. 6, 1931)

Class 2292.1—Cuprammonium Disperse Viscosity of Pulp

ANON
Determination of cuprammonium viscosity. Paper Trade Jour. *94,* No. 19, 38-9 (May 12, 1932); Tech. Assoc. Papers XV, *217*; C. A. *26,* 4716

GALPERIN, D. I. AND D. I. TUMARKIN
Effect of chemical preparation of linter on the viscosity of the resulting cellulose and its nitrates. J. Applied Chem. (U. S. S. R.) *5,* 34-62 (1932) C. A. *26,* 4947

KINKEAD, R. W.
Measurement of the viscosity of solutions in curprammonium hydroxide. A capillary-tube viscometer. J. Textile Inst. *22,* T411-15 (1931); C. A. *26,* 1436

MITCHELL, C. R.; G. J. POTTER AND J. H. ROSS
Effect of variables in the soda process. Pulp and Paper Mag. of Canada *33,* 25, 46, 48, 50 (1932); C. A. *26,* 3107

NAKASHIMA, T. AND M. NEGISHI
The viscosity of cellulose cuprammonium solutions. J. Soc. Chem. Ind., Japan *35,* Suppl. binding 422-5 (1932)

OKADA, H. AND E. HAYAKAWA
Control of viscosity in the bleaching of pulp. Cellulosechemie *12,* No. 6: 153-58 (June 7, 1931); Abs. in Paper Trade Jour. *94,* No. 11, p. 31 (Mar. 17, 1932)

REUBEN, M. D.
Cuprammonium viscosity test in pulp evaluation. Paper Trade Jour. *95,* No. 13, 29-30 (Sept. 29, 1932); C. A. *26,* 6126

Class 2294—Bleachability

BERGMAN, G. K.
Methods of determining the degree of pulping and the strength of pulps. Papierfabr. *30,* Tech.-wiss. Teil, 121-6 (Mar. 13, 1932); C. A. *26,* 4713
(See also reference to Bergman in class 2291)

JONAS, K. G. AND E. BUCHERS
The iodine number of pulps. Papierfabr. *30,* Tech.-wiss. Teil, 301-3 (1932); C. A. *26,* 4713

KULLGREN, CARL
A method for determining the degree of disintegration of sulphite pulp. Svensk. Kem. Tid. *43,* 161-74 (1931); C. A. *26,* 2315. Zellstoff Papier *11,* No. 9: 525-28 (Sept., 1931); Paper Trade Jour. *94,* No. 15, A31 (Apr. 14, 1932)

PEREKALSKII, N.
Comparative characteristic of the methods for determination of the degree of cooking of sulphite pulp. Bumazhnaya Prom. *10,* No. 7, 30-5 (1931); C. A. *26,* 1776

SCHWALBE, C. G.
Comparison of the common methods for determining pulping degree. Papierfabr. *30,* Tech.-Wiss. Teil, 147-51 (Mar. 27, 1932); C. A. *26,* 4712

Class 2294.1—Bleachability of Pulp with Chlorine

HALL, G., I. KLINGA, G. LINDSTROM, C. PALM AND Y. SUNDBLAD
Report of the investigation of the standardizing committee on methods of control in the determination of the degree of bleaching in wood cellulose. Svensk Pappers-Tidn. *35,* 478-88, 510-19, 542-8, 578-89 (1932); C. A. *26,* 6123

OKADA, H.
Determination of the degree of purity of unbleached sulphite cellulose by use of chlorine water. Cellulosechemie *13,* 33-5 (Feb. 7, 1932); C. A. *26,* 4949

Class 2294.21—Bleachability with Cacium Hypochlorite

LURE, S.
Method for preparation of standard solution of chlorid

of lime. Bumazhnaya Prom. *11*, No. 5, 57-8 (1932); C. A. *26*, 5750

Class 3110—Flobility of Fiber in Suspension

BROWN, R. B.
Flobility and springback of pulp and board. Paper Trade Jour. *94*, No. 13, 35-8 (Mar. 31, 1932); C. A. *26*, 3106

Class 4120—Slowness by Drainage Rate

FRENCH, GEORGE F.
"Slowness tester" for paper stock. U. S. Pat. 1,838,614 (Dec. 29, 1931) (Assigned to Riegel Paper Corp.): C. A. *26*, 1442; Paper Trade Jour. *95*, No. 13, A34

JESPERSON, HELGO W.
Apparatus for testing the "slowness" of pulp mixtures such as those used for the manufacture of insulation. (Assigned to Western Electric Co.) U. S. Pat. 1,840,101 (Jan. 5, 1932); C. A. *26*, 1162

Class 4133—Williams' Freeness Tester

WILLIAMS, F. M.
Freeness tester. U. S. Pat. 1,828,210 (Oct. 20, 1931); Abs. in Paper Trade Jour. *94*, No. 22, A29 (June 2, 1932)

Class 4141—Compressibility by Springback Measurements

(See reference to Brown in class 3110)

Class 5300—Structure Properties

DOUGHTY, R. H.
The relation of sheet properties and fiber properties in paper. IV. The use of structural concepts in pulp evaluation and paper design. Paper Trade Jour. *95*, No. 10, 31-38 (Sept. 8, 1932)

Class 5951—Strength of Paper

VENNEMAN, F.
The determination of the strength of paper. Mon. papeterie belge *12*, 255-60 (1932); C. A. *26*, 4716

REFERENCES BY SPECIAL CLASSES

Class A—Conversion of Pulp to Test Sheet Form for Evaluation by Paper Testing Methods

ALEXANDER, C., D. JONES, A. LEGENDRE, T. NYBERG, R. PATTON AND W. E. ADLINGTON
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Variations in Yield and Quality of Sulphite Pulp Made of Spruce From Different Sources *

Bjarne Johnsen[1] and Charles H. Reese[2]

Abstract

The results presented in this paper show the variations in pulp yield per unit volume of wood. The technical analyses show the differences in physical and chemical characteristics of pulp prepared from the various samples. From these data can be determined the comparative economic and technical values of wood from different sources.

In a previous paper "Evaluation of Pulp Wood" (PAPER TRADE JOURNAL, September 11, 1930) were presented the results of tests on samples of spruce and balsam from various sources, showing differences in pulp yield and pulping characteristics of these species from different locations. This work has been continued and the results given below are representative of many tests conducted within the past several years. Tests on spruce from the following sources are considered in the present discussion:

(1) North Shore of Lake Superior
(2) Eastern Canada
(3) Western Spruce
(4) Russian Spruce
(5) Polish Spruce

It is not our intention to discuss these tests in their relation to wood from specific regions. The Hammermill Paper Company has been interested in wood from the above sources and despite the fact that the results we have obtained are of value to us as an aid in purchasing wood, it is felt that definite information which could be applied generally to wood from particular sources cannot be published until this study has been continued for several more years.

The principal objects of this paper are to report the results of tests on the evaluation of wood, to outline the technique employed and to present actual variations found, thus showing that investigations of this kind may be of value to individual mills in choosing sources of wood.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Fibrous Raw Materials Committee and the A.P.P.A. Pulpwood Committee.
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Sampling

The sample sticks are usually obtained when the pulpwood boats are unloaded, a certain number of logs from each cargo being taken with no conscious choice being exercised. These logs represent the entire shipment of wood from each particular source. At this time the woodlands department make certain measurements on the wood, such as number of sticks per cord, per cent bark, trim, length of sticks, amount of cull wood and actual cubic feet of wood per cord. These values in conjunction with determinations made in the laboratory are used to establish the value per cord of wood.

Density

For determining density of the samples discs are cut from every log and the specific gravity obtained from water displacement is calculated on the oven dry basis (100-105 deg. C.). The logs are chipped and screened in semi-commercial equipment which makes it possible to avoid contamination of the sample. The chips are thoroughly mixed and the weight per cubic foot of chips is then determined. By this means a check on the weight per cubic foot of solid wood is made against the weight per cubic foot of chips. Over a period of years it has been found that by using the factor 0.385 to convert the weight per cubic foot of chips to weight per solid cubic foot of wood a satisfactory agreement between these values is obtained.

Cooking

The cooking equipment consists of autoclaves of five liters capacity. These autoclaves are lead lined, steam jacketed and provided with thermometer wells, relief lines, and indicating pressure gauges. Calcium base cooking acid of the following composition is used: total SO_2 5.55 per cent and combined SO_2 1.00 per cent.

The quantity of chips used, 500 grams (oven-dry weight), is large enough to produce enough pulp for physical and chemical tests but small enough to make possible accurate determination of yields. Five eighth inch chips are used and in every case duplicate cooks are made. The proportion of acid to oven dry chips is 7 to 1 by weight. This ratio is higher than general mill operation but comparative values are obtained and the amount of acid is sufficient to provide for differences in the volume of chips.

The cooks are carried out as follows: After sufficient time has been allowed for penetration, the autoclaves are rapidly heated to 130 deg. C. (this requires twenty minutes), after which the temperature is held at 130 deg. C. for the duration of the cook.

For different woods the cooking time at 130 deg. C. is varied so that in every case an easy bleaching pulp, requiring about 12 per cent bleach powder, is produced. The unbleached pulp is screened on a flat screen the plates of which are cut .008 inch.

In Table I are presented data on cooking time at 130 deg. C. to produce pulp of 12 per cent bleach powder requirement. This expresses the cooking quality as time at 130 deg. C., but the cooking requirement may also be expressed as maximum temperature required to complete the cook in a certain number of hours, depending upon the type of cooking curve. For our own operating conditions this relation has been established; reference to this was made in a previous paper. In the same table are given values for beating requirement expressed as revolutions of the ball mill to produce a certain slowness. Mullen and folding tests are made on sheets prepared from beaten unbleached pulp in the usual manner.

TABLE I

Sample	Hours at 130° C.	Beating Requirement	Mullen	Folds
A	6	3300	143	1805
B	7	3300	131	1485
C	7½	3300	123	1748
D	6¾	3300	133	2043
E	7¼	3300	142	2950
F	7½	3600	140	2140
G	6¾	3300	135	
H	7	3700	107	

The minimum and maximum cooking times at 130 deg. C. are 6 and 7½ hours, respectively. This is a variation of 20 per cent based on the 7½ hour cook. There is a variation of 11 per cent in the beating requirement, a difference of 25 per cent in Mullen test, and 55 per cent in folding test all based on the highest values. No definite relation between density of wood and cooking requirement was found; this is seen by referring to Table II.

The samples were bleached at 5 per cent consistency and the temperature was 100 deg. F. in every case. The loss in bleaching was determined for each sample. Of course, the amount of bleach liquor added was changed slightly to correspond with the actual bleach requirement for each sample. In the following tables the yields are always given as bleached pulp. In view of the fact that lignin residues in the unbleached pulp would interfere in the chemical analyses, particularly the viscosity test, the chemical tests were also made on bleached pulp.

TABLE II

	1	2	3	4	5
Sample	Lbs. per Solid Cu. Ft. O. D. Wood	O.D. Bl. Pulp Yield at 12% Bl. Reg.	Screenings Per Cent	Lbs. of O.D. Bl. Pulp per Solid Cu. Ft. Wood	Solid Cu. Ft. Wood per Ton A.D. Bl. Pulp
A	27.0	47.47	0.05	12.81	140.5
B	26.0	46.16	0.05	12.00	150.0
C	25.6	45.68	1.64	11.69	153.8
D	25.5	46.77	0.06	11.93	150.9
E	24.6	46.50	0.65	11.44	157.4
F	23.25	46.22	0.03	10.75	167.5
G	22.3	47.82	0.36	10.66	168.8
H	22.1	47.5	0.21	10.50	171.5

In column 1 of Table II are given weight in pounds of a solid cubic foot of oven-dry wood; in fact, the data are arranged starting with the densest wood as A and continuing down to the lightest wood. There is a maximum difference of 18 per cent in the density of these samples. In column 2 are given yields of oven-dry bleached pulp based on oven-dry chips; here the maximum difference is 4.4 per cent on 47.82, the highest value. These variations are representative of differences usually found in testing samples of wood from these several sources. In the third column are given per cent screenings based on oven-dry wood and here it is noted that samples C and E, which are from the same source but represent shipment of different years, give considerably higher screenings than any of the other samples. The cause of this was investigated and apparently a local high density of the wood near the surface of the logs was responsible for the high screen yield. At the time this wood was run in the mill, examination of the screenings showed that they were the same type as were obtained in the experimental cooks.

In column 4 are given the pounds of oven-dry bleached pulp per solid cubic foot of wood and column 5 shows the number of solid cubic feet of wood required per ton of air-dry bleached pulp. For the latter value there is a variation of 18 per cent in the number of solid cubic feet of wood required per ton of air-dry bleached pulp. It is apparent that by far the most important factor determining pulp yield from a certain volume of wood is its density, but there is also an appreciable difference in the yield by weight with no definite relation to the density of the wood.

Earlier in this paper it was mentioned that the actual

cubic feet of wood per cord were determined when the wood was unloaded from the boats. Such factors as type of wood, that is, whether peeled or rough, per cent bark remaining on the log in case it is rough wood, length and diameter of sticks, and trim influence the actual solid cubic feet of wood per cord. The effect of these factors may be seen in Table III in which the solid cubic feet of wood per cord is based on actual measurements.

TABLE III

Sample	1 Solid Cu. Ft. Wood per cord	2 Solid Cu. Ft. of Wood per Ton of A. D. Bl. Pulp	3 Cords Per Ton A. D. Bl. Pulp
A	91.2	140.5	1.54
B	100.0	150.0	1.50
C	95.0	153.8	1.62
D	97.0	150.9	1.56
E	94.0	157.4	1.67
F	104.0	167.5	1.61
G	104.4	168.8	1.62
H	...	171.5	...

The solid cubic feet of wood per cord for each of the samples excepting "H" are given in column 1 in Table III. A variation of 12.6 per cent is found on the basis of 104.4, the highest value. The values in column 2 are taken from Table II column 5. The cords of wood per ton of air-dry bleached pulp are given in column 3. There is a variation of 10.2 per cent based on the highest value of 1.67 cords per ton. The wood requirement per ton of pulp which is given in column 3 may seem low, but it should be remembered that these values are based on experimental cooks made under uniform cooking conditions, and that there are no fiber losses.

In Table IV are given the results of chemical tests on bleached pulps from each of the samples.

TABLE IV

Sample	Alpha Cell. in Bl. Pulp Per Cent	Alpha Cell. Yield on O. D. Wood %	Copper No.	Viscosity of Bl. Pulp (Centipoises)
A	84.64	39.8	2.0	34.2
B	83.58	38.7	2.3	25.6
C	85.42	38.99	1.9	23.2
D	84.2	39.4	2.2	23.2
E	84.46	39.3	2.1	30.3
F	81.97	38.00	2.3	23.8
G	84.60	40.46	2.3	22.9
H	83.86	39.6	3.0	20.3

Alpha cellulose was determined by the method of the Division of Cellulose Chemistry, American Chemical Society. Copper number was determined by the Schwalbe-Hägglund method, and the cuprammonium viscosity was determined by the tentative method of the T.A.P.P.I., the value are given in centipoises.

The per cent alpha cellulose in bleached pulp and alpha cellulose yield are within fairly narrow limits. The copper number of sample H is somewhat higher than for the other samples. There is also a considerable variation in the viscosity tests on the various samples, showing variation in the quality of the bleached pulps.

The investigation was carried out with the assistance of F. M. Truesdale and C. H. Alder.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Cellulose and Lignin

Fermentation of Cellulose by Thermophilic Bacteria. Yoshinori Tomoda. I. Preliminary Report. J. Soc. Chem. Ind. Japan 35 (Supp. Binding): 534B-535B (Nov., 1932). A thermophilic cellulose-decomposing bacterium, thought to belong to a species of *Clostridium thermocellum,* has been isolated from a manure heap. The organism easily ferments filter paper and raw or refined cotton wool; ferments slightly viscose, news print and sulphite pulp; cannot ferment plant leaves, sawdust, nitrocellulose and cellulose acetate. II. Properties of the Attacked Cellulose Fiber as Compared with the Original One. *Ibid.,* 535B-536B.—The copper number, viscosity in cuprammonium solution and alpha-, beta- and gamma-cellulose contents were determined on filter paper before fermentation and at various times during fermentation. The values of the corresponding properties remained unchanged, indicating that the action of the organism does not occur simultaneously throughout the entire fiber; it attacks the fiber progressively, the attacked portion undergoing very rapid change, while the remaining part undergoes no change except mechanical disintegration. III. Fermentation Tests of Various Cellulosic Materials. *Ibid.,* 536B.—Undried cotton cellulose regenerated from sulphuric acid solution, standard pure cellulose, raw and refined cotton wool, filter paper, tissue paper, hemp fiber and sulphite pulp ferment very easily; mercerised cotton wool, cuprammonium rayon and viscose ferment to some extent; nitrosilk and dried granular cotton cellulose regenerated from cuprammonium solution are very difficult to ferment; dried granular cotton cellulose regenerated from sulphuric acid solution, cellophane, acetate rayon and nitrocellulose do not ferment. The author considers the fermentability of the materials depends on their microscopical rather than their colloidal structure.—A. P.-C.

Hygroscopic Moisture of Cellulose. X Velocity of Sorption of Water Vapor on Cellulose. S. Oguri. J. Soc. Chem. Ind. Japan 35 (Supp. Binding): 507B-515B (Nov., 1932).—The sorption of water vapor on cotton cellulose and other celluloses under constant pressure and temperature proceeds in two stages at least. The velocity of sorption in each stage is expressed fairly well by means of Lagergren's equation: $dx/dt = k(x\infty - x)$, in which x and $x\infty$ denote the amount of water vapor sorbed at time t and at equilibrium respectively, and k is a constant. —A. P.-C.

The Orientation of Crystallites in Wood Cellulose. S Pienkowski. Compt. Rend. Soc. Phys. (Warsaw) 5: 275-285 (275-276 in French) (1931).—Sections of wood taken from different parts of the trunk in three different directions show a uniform distribution of the cellulose crystallites, which are oriented along the cell walls. Considerable differences in the degree of dispersion of the crystallites are due to the thickness of the annual rings. Elm and ash show a better orientation in thicker, pine and spruce in thinner, rings. Drying the wood causes a lowering of the degree of dispersion. The orientation of the cellulose crystallites increases with the density of the wood, and therefore, probably affects its mechanical properties.—A. P.-C.

Method of Determining the Composition of Addition Compounds of Cellulose. G. Champetier. Compt. Rend. Acad. Sci. 195: 499-501 (1932).—The method consists in studying the system cellulose-water-substance *A* by analyzing a series of samples containing a decreasing quantity of mother liquor. The samples are taken in the course of a progressive drying of the cellulosic compound impregnated with mother liquor. The variation in the quantity of *A* in the successive samples as a function of the water in them is a straight line, which passes through a point which would correspond to the analysis of a sample containing no mother liquor; the co-ordinates of this point, which cannot be determined experimentally, fix the composition of the compound if it exists. In order to determine this point it is necessary to consider all the lines related to the different concentrations of solutions of *A*.—A. P.-C.

Quantitative Study of the Adsorption of Metallic Cations by Cellulose. P. Pascal and J. Hansot. Compt. Rend. Acad. Sci. 195: 349-351 (1932).—Absorbent cotton was placed in (1) dilute solution of lead nitrate alkalinized with excess sodium acetate, (2) pure thallium nitrate, (3) lead chloride buffered to a pH of 4.8, and (4) pure lead chloride at a temperature of about 17 deg. C. In the first three cases there exists a concentration typical of the salt at which the amount adsorbed passes through a minimum. In the last case the anion of the salt was not adsorbed although the pH of the solution decreased in the final equilibrium. The metal seemed to be retained as the hydroxide.—A. P.-C.

Concerning the Colloid Chemistry of Cellulose. D. Kruger, Zellstoff Paper 12, No. 11: 433-35 (Nov., 1932). —The following facts were discussed, the fine structure and mechanical properties of fibers, the micellar structure of native cellulose fibers, animal fibers, rontgenography of swelling, reaction ways of cellulose, solubility number as a measure of the chemical disintegration, and more experiments on the molecular weight of cellulose. --J. F. O.

The Technical Importance of the Substances Accompanying Cellulose. Runkel. Papier Fabr. 30, No. 48: 682 (Nov. 27, 1932).—Discussion of hemicellulose, pentosanes, etc. on the importance of cellulose technology.—J. F. O.

Concerning the Organization of the Plant Cell Membrane. Max Ludtke, Cellulosechemie 13, No. 11: 169-175; No. 12: 191-194 (Nov. 6, 27, 1932).—J. F. O.

Concerning the Higher Fatty Acid Ester of Cellulose and Starch. Eugen Lorand. Cellulosechemie 13, No. 12: 185-191 (Nov. 27, 1932).—J. F. O.

Chemistry of Lignin. VII. Distillation of Alkali Lignin in Reduced Atmosphere of Carbon Dioxide. Max Phillips and M. J. Goss. Ind. Eng. Chem. 24: 1436-1441 (Dec., 1932).—Dry distillation of alkali lignin from corncobs at a maximum temperature of 400 deg. C. yielded 11.7 per cent aqueous distillate, 28.3 per cent oily distillate, 50.5 per cent carbonized residue and 9.3 per cent gas. The aqueous distillate contained acetic acid, acetone, methanol, and catechol. The oil contained phenol, o-creosol, guaiacol, creosol, 1-vinyl-3-methoxy-4-hydroxybenzene, 1-*n*-propyl-3-methoxy-4-hydroxybenzene, catechol, and a dimethoxycarboxylic acid.—A. P.-C.

Molecular Size of Cellulose and Consideration of Its Technical Importance. W. Karo. Nitrocellulose 3, No. 10: 184-186; No. 11: 202-204 (Oct., Nov., 1932).; Bull. Inst. Paper Chem. 3: 108.—The author presents the conception of the cellulose molecule as held by various investigators today. The relation, as it is understood, between chain lengths in the cellulose micelle and viscosity is explained. It is suggested that viscosity measurements might be used to trace and prevent degradation in commercial processing, evaluating raw materials and determining the relationship between molecular size and chemical reactivity.—C. J. W.

Chemical Formula of the Lignin of Conifers. Peter Klason. Svensk Pappers Tidn. 35, No. 21: 717-718 (Nov. 15, 1932); Svensk Kem. Tid. 44, No. 11: 285-288 (Nov., 1932); Bull. Inst. Paper Chem. 3: 113.—A brief discussion is given regarding certain views of the composition of lignin, the author's procedures for determining certain characteristics being briefly outlined. Discrepancies in the conceptions of workers in this field are pointed out quite emphatically.—C. J. W.

Acetic Acid from Spruce Wood. Erik Hagglund. Svensk Pappers. Tidn. 35, No. 22: 749-750 (Nov. 30, 1932).—A reply to Klason (preceding abstract).—C. J. W.

Composition of Spruce Wood. F. W. Klingstedt. Svensk Pappers Tidn. 35, No. 22: 750, 755 (Nov. 30, 1932).—A reply to Klason (abstracted above).—C. J. W.

Mechanical Process

Pulp Grinding Stone. Hans P. Scheel and Hans P. Scheel, Jr. U. S. pat. 1,884,279 (Oct. 25, 1932).—The core of the stone is made of plastic material in which are embedded pipes through which a suitable medium can be passed to change the temperature of the plastic material during setting.—A. P.-C.

Ring-shaped Grind Stone for the Production of Ground Wood. Max Tamaschke, Herzberg. Ger. pat. 558,200 (April 20, 1929).—The grind stone consists of a single stone ring or is made out of many stone ring sectors.—J. F. O.

Device for Grind Stones. Miag Muhlenbau und Industrie A.G. Braunschweig Germany. Swed. pat. 74,477 (Jan. 14, 1927).—The clamping discs for fastening the stone to the shaft have a spring action.—J. F. O.

Device for Grind Stones. Miag Muhlenbau und Industrie A.G. Braunschweig, Germany. Swed. pat. 74,479 (Feb. 15, 1929).—The clamping discs for fastening the stone to the shaft are formed as springs—J. F. O.

Process and Device for Regulating the Pressure on Multiple Press Grinders. Trygve Kittelsen, Oslo, Nor. pat. 50,652 (May 2, 1931).—J. F. O.

Miscellaneous

The Paper Division of the Deutschen Museum, Munich. Johannes Klemm. Wochbl. Papierfabr. 63, No. 23A: 5-9 (June 4, 1932).—In this museum is a complete experimental-size paper machine with all necessary auxilliary apparatus. There is also complete apparatus for all the pulping processes. This division might be called a course in pulp and paper making, since every piece of apparatus can be used for the actual manufacture of pulp and paper,—J. F. O.

Paper and the Technology of Printing. J. Bekk. Wochbl. Papierfabr. 63, No. 28: 532-34 (July 9, 1932).—The author discusses the present situation between the paper maker and the printer and stresses the necessity for closer cooperation. The principle types of printing are enumerated with such special tests which should be carried out on the paper for each type of printing. The object and the method for carrying out these tests are given in brief.—J. F. O.

Experiment on the Influence of Clay Suspensions on Printing. Rudolf Lorenze. Wochbl. Papierfabr. 63, No. 23A: 22-25 (June 4, 1932).—The author first discusses the factors which influence the value of fillers for paper, namely the size and form of the particles and the degree to which they ball together. Through mechanical action the viscosity of the suspension changes because a disintegration with subsequent hydration takes place. The apparatus used in the experiments is described.—J. F. O.

The Dirt Content of Chips*

By W. M. Osborne[1]

Abstract

The general procedure of controlling the pulp quality in regard to dirt content is to sample the pulp from the drying machine, wet web or press as the case may be, and make a dirt count and analysis of the dirt. The dirt count being made by the pulp inspector on shift and the analysis by the chemist in the laboratory. The dirt count method is figured in specks per gram, per square foot, or in specks per pound of pulp. Every mill has a different method.

A great deal of progress has been made by the technical men in the past several years. More and more attention has been given to the grading of the pulp, in order to meet the requirements of the paper makers and sales competition. This is especially true in the mill selling its pulp to the market.

A Method Used in Several Large Pulp Mills

A method which is used in several of the large pulp mills is as follows: A sheet of pulp is taken at regular intervals, cut 12 x 12 inches, weighed, the specks counted by placing the sheet over a strong light. The penalty is as follows:

Small light spots	1
Small dark spots	2
Medium spots	5
Large spots	10

The count is reported as specks per pound of pulp.

Example—weight of one square foot = 50 grams
35 small light specks = 35
8 small dark specks = 16
2 medium specks = 10
2 large specks = 20
Total — 81

$$81 \times \frac{454}{50} = 737 \text{ specks for each pound of pulp}$$

The analysis of the pulp dirt is made by the microscopical method and with the use of indicators. The estimated percentage of bark, pitch, black knots, etc., is plotted against the chip analysis, which I will describe later.

While so much attention has been paid to this source of pulp control and pulp grading, very few mills have followed up the chief source of pulp dirt, which is the wood. If we pay attention to making clean, uniform chips we will be able to eliminate the greatest source of dirt trouble.

I have had occasion in several mills, to observe and follow up the dirt problem and found after investigation that the wood caused much of the pulp dirt. Of course, the entire system must be kept properly cleaned if we intend to have clean pulp from clean wood. Every pulp mill intends to clean the wood, but the operator will let dirty wood get into the chipper. There is a simple method of checking up on the chip quality, but before describing it, we will see what the relative position of the various wood dirts are. Namely, bark, black knots, pin knots, red and other knots, and pitch pockets.

Tests to Establish Ratings

To establish a rating for these dirts, tests were made as follows: Pieces of dirt actually representative of that found in the chips were collected and sorted as named above.

Hand sorted half inch chips (free from the aforementioned dirts) were carefully cooked to a normal hardness in a laboratory digester and the resulting pulp used as a standard.

Other cooks were made by adding a given percentage of each kind of dirt to clean sorted half inch chips. All cooks were of approximately the same hardness.

The pulp was washed, screened over a laboratory pulp screen and the sheets made. A portion of the pulp from each cook was bleached and made into sheets. The dried sheets were counted for specks and the results calculated to the gram of pulp basis. Table I shows the relative position of each kind of dirt.

TABLE I
RELATIVE POSITION OF WOOD DIRTS

Kind of Dirt	Specks per Gram		Ratio		Penalty	
	Unblchd.	Bleached	Unblchd.	Bleached	Unblchd.	Bleached
Clean chips	15	13	0	0	0	0
Bark	652	142	43.5	10.9	66	44
Black knots	66	49	4.4	3.8	6	16
Pin knots	27	25	1.8	1.9	2	2
Red knots	24	19	1.6	1.5	2	2
Pitch pockets	31	16	2.1	1.2	2	1

Sampling

To create interest on the part of the chipping plant crew and foremen and point out the quality of chips, samples are collected during the shift or at given periods, of about four hours. These samples are collected during the shift or at the end of each day, storing them in tight cans. The chip inspector makes the size tests, moisture and dirt inspection. There are a number of laboratory devices for screening out the various sizes, probably the best being a regular laboratory chip screen, such as is made by the Deister Concentrator Company. The screened chips are weighed and the percentage of each size calculated. The chips are laid on a table with the respective sides in a separate pile. This readily points out the variation of chip sizes to the observer. The inspector has picked out as much dirt as he can find and placed on a table under the label of bark, black knots, etc. Each sample is then lettered A, B, C, etc., to conceal its identification. After allowing the foreman or committee to judge the clean lines, they are told the respective shifts during which the sample was taken. In this way it often happens the foreman will pick his own shift as the dirtiest.

Each Kind of Dirt Weighed

The tester now weighs up each kind of dirt and calculates the weight to a standard chip weight basis and corrects for moisture. The weight of each kind of dirt multiplied by the penalty gives the possible dirt count to be expected.

TABLE II
CHIP PENALTY REPORT

Dirt in Chips	Gr. Dirt per 1,000 Gr. Chips	Penalty	Estimated Dirt Count		Per Cent Dirt
		Unblchd.	Bleached	Unblchd.	Bleached	
Bark	10.	66	44	660	440	18.2
Black knots.	20.	6	16	180	120	36.3
Pin knots	10.	2	2	20	20	18.2
Red knots	10.	2	2	20	20	18.2
Pitch	5.	2	1	10	5	9.1
Total	55.	..	..	890	605	100.0

When weighing the dirts, whatever wood that is with knots, etc., should be weighed.

In most cases it will be necessary to increase the penalty for bark and black knots as these dirts are more easily broken up in the mill operation. For this reason the penalty shown has been corrected to suit conditions according to past findings.

As previously mentioned, the results from the preceding report are plotted along with the dirt count and analysis of the pulp. Plot charts can also be posted in the chip room. In this way a close check is kept on the wood room operations and points out at once the increase of wood dirt and readily shows dirt increase from other sources of the system.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
[1] Member TAPPI, chemist, Hoquiam, Washington.

Text of President Roosevelt's Statement on Recovery Act Policies

A prominent paper manufacturer writes: "I think that it was very thoughtful of you to publish in full the whole National Industrial Recovery Act.

"An equally important document to this, in my opinion, is the message which the President gave to the press upon signing the bill on June 16. Don't you think that it would be of interest to your readers to publish this in this week's paper?

"Should you publish it, I would make the further suggestion that the fifth paragraph from the end, having to do with re-negotiating contracts, be printed in italics, which is the kernel of the whole message."

The PAPER TRADE JOURNAL gladly complies with this request, printing in italics the part of the statement suggested.

The President's Statement

The law I have just signed was passed to put people back to work—to let them buy more of the products of farms and factories and start our business at a living rate again.

This task is in two stages—first, to get many hundreds of thousands of the unemployed back on the payroll by snowfall, and, second, to plan for a better future for the longer pull. While we shall not neglect the second, the first stage is an emergency job. It has the right of way.

The second part of the act gives employment by a vast program of public works. Our studies show that we should be able to hire many men at once and to step up to about a million new jobs by Oct. 1, and a much greater number later.

We must put at the head of our list those works which are fully ready to start now. Our first purpose is to create employment as fast as we can, but we should not pour money into unproved projects.

We have worked out our plans for action. Some of it will start tomorrow. I am making available $400,000,000 for State roads under regulations which I have just signed, and I am told that the States will get this work under way at once. I have also just signed over $200,000,000 for the navy to start building ships under the London treaty.

Covenant to Ban Starvation Pay

In my inaugural I laid down the simple proposition that nobody is going to starve in this country. It seems to me to be equally plain that no business which depends for existence on paying less than living wages to its workers has any right to continue in this country. By "business" I mean the whole of commerce as well as the whole of industry; by workers I mean all workers—the white-collar class as well as the man in overalls; and by living wages I mean more than a bare subsistence level—I mean the wages of decent living.

Throughout industry the change from starvation wages and starvation employment to living wages and sustained employment can, in large part, be made by an industrial covenant to which all employers shall subscribe.

It is greatly to their interest to do this because decent living, widely spread among our 125,000,000 people, eventually means the opening up to industry of the richest market which the world has known. It is the only way to utilize the so-called excess capacity of our industrial plants. This is the principle that makes this one of the most important laws that ever came from Congress because, before the passage of this act, no such industrial covenant was possible.

On this idea, the first part of the act proposes to our industry a great spontaneous cooperation to put millions of men back in their regular jobs this Summer. The idea is simply for employers to hire more men to do the existing work by reducing the work-hours of each man's week and at the same time paying a living wage for the shorter week.

No employer and no group of less than all employers in a single trade could do this alone and continue to live in business competition. But if all employers in each trade now band themselves faithfully in these modern guilds—without exception—and agree to act together and at once, none will be hurt and millions of workers, so long deprived of the right to earn their bread in the sweat of their labor, can raise their heads again. The challenge of this law is whether we can sink selfish interest and present a solid front against a common peril.

Right to Act Cooperatively

It is a challenge to industry which has long insisted that, given the right to act in unison, it could do much for the general good which has hitherto been unlawful. From today it has that right.

Many good men voted this new charter with misgivings. I do not share these doubts. I had part in the great cooperation of 1917 and 1918 and it is my faith that we can count on our industry once more to join in our general purpose to lift this new threat and to do it without taking any advantage of the public trust which has this day been reposed without stint in the good faith and high purpose of American business.

But industry is challenged in another way. It is not only the slackers within trade groups who may stand in the path of our common purpose. In a sense these groups compete with each other, and no single industry, and no separate cluster of industries, can do this job alone for exactly the same reason that no single employer can do it alone. In other words, we can imagine such a thing as a slacker industry.

This law is also a challenge to labor. Workers, too, are here given a new charter of rights long sought and hitherto denied. But they know that the first move expected by the nation is a great cooperation of all employers, by one single mass-action, to improve the case of workers on a scale never attempted in any nation. Industries can do this only if they have the support of the whole public and especially of their own workers.

This is not a law to foment discord and it will not be executed as such. This is a time for mutual confidence and help and we can safely rely on the sense of fair play among all Americans to assure every industry which now moves forward promptly in this united drive against depression that its workers will be with it to a man.

Must Spend Billions Quickly

It is, further, a challenge to administration. We are relaxing some of the safeguards of the anti-trust laws. The public must be protected against the abuses that led to their enactment, and to this end we are putting in place

of old principles of unchecked competition some new government controls.

They must above all be impartial and just. Their purpose is to free business—not to shackle it—and no man who stands on the constructive forward-looking side of his industry has anything to fear from them. To such men the opportunities for individual initiative will open more amply than ever.

Let me make it clear, however, that the anti-trust laws still stand firmly against monopolies that restrain trade and price-fixing which allows inordinate profits or unfairly high prices.

If we ask our trade groups to do that which exposes their business, as never before, to undermining by members who are unwilling to do their parts, we must guard those who play the game for the general good against those who may seek selfish gains from the unselfishness of others. We must protect them from the racketeers who invade organizations of both employers and workers.

We are spending billions of dollars, and if that spending is really to serve our ends it must be done quickly. We must see that our haste does not permit favoritism and graft. All this is a heavy load for any government and one that can be borne only if we have the patience, cooperation and support of people everywhere.

Code Hearings to Be Public

Finally, this law is a challenge to our whole people. There is no power in America that can force against the public will such action as we require. But there is no group in America that can withstand the force of an aroused public opinion. This great cooperation can succeed only if those who bravely go forward to restore jobs have aggressive public support and those who lag are made to feel the full weight of public disapproval.

As to the machinery—the practical way of accomplishing what we are setting out to do, when a trade association has a code ready to submit and the association has qualified as truly representative, and after reasonable notice has been issued to all concerned, a public hearing will be held by the administrator or a deputy.

A Labor Advisory Board appointed by the Secretary of Labor will be responsible that every affected labor group, whether organized or unorganized, is fully and adequately represented in an advisory capacity, and any interested labor group will be entitled to be heard through representatives of its own choosing.

An Industrial Advisory Board appointed by the Secretary of Commerce will be responsible that every affected industrial group is fully and adequately represented in an advisory capacity, and any interested industrial group will be entitled to be heard through representatives of its own choosing.

A Consumers Advisory Board will be responsible that the interests of the consuming public will be represented and every reasonable opportunity will be given to any group or class who may be affected directly or indirectly to present their views.

Warns Against Too Much Haste

At the conclusion of these hearings and after the most careful scrutiny by a competent economic staff, the administrator will present the subject to me for my action under the law.

I am fully aware that wage increases will eventually raise costs, but I ask that managements give first consideration to the improvement of operating figures by greatly increased sales to be expected from the rising purchasing power of the public. That is good economics and good business.

The aim of this whole effort is to restore our rich domestic market by raising its vast consuming capacity. If we now inflate prices as fast and as far as we increase wages, the whole project will be set at naught. We cannot hope for the full effect of this plan unless, in these first critical months, and, even at the expense of full initial profits, we defer price increases as long as possible.

If we can thus start a strong, sound, upward spiral of business activity, our industries will have little doubt of black-ink operations in the last quarter of this year. The pent-up demand of this people is very great and if we can release it on so broad a front, we need not fear a lagging recovery. There is greater danger of too much feverish speed.

In a few industries there has been some forward buying at unduly depressed prices in recent weeks. Increased costs resulting from this government-inspired movement may make it very hard for some manufacturers and jobbers to fulfill some of their present contracts without loss.

Sees Start Made in July

It will be a part of this wide industrial cooperation for those having the benefit of these forward bargains (contracted before the law was passed) to take the initiative in revising them to absorb some share of the increase in their suppliers' costs, thus raised in the public interest. It is only in such a willing and considerate spirit, throughout the whole of industry, that we can hope to succeed.

Under Title I of this act, I have appointed Hugh Johnson as administrator and a special Industrial Recovery Board under the chairmanship of the Secretary of Commerce. This organization is now prepared to receive proposed codes and to conduct prompt hearings looking toward their submission to me for approval.

While acceptable proposals of no trade group will be delayed, it is my hope that the ten major industries which control the bulk of industrial employment can submit their simple basic codes at once and that the country can look forward to the month of July as the beginning of our great national movement back to work.

During the coming three weeks, Title II, relating to public works and construction projects, will be temporarily conducted by Colonel Donald H. Sawyer as administrator and a special temporary board consisting of the Secretary of the Interior as chairman, the Secretary of Commerce, the Secretary of Agriculture, the Secretary of War, the Attorney General, the Secretary of Labor and the Director of the Budget.

During the next two weeks the administrator and this board will make a study of all projects already submitted or to be submitted, and, as previously stated, certain allotments under the new law will be made immediately.

Between these twin efforts—public works and industrial re-employment—it is not too much to expect that a great many men and women can be taken from the ranks of the unemployed before Winter comes. It is the most important attempt of this kind in history.

As in the great crisis of the World War, it puts a whole people to the simple but vital test: "Must we go on in many groping, disorganized, separate units to defeat or shall we move as one great team to victory?"

Swedish News Print Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 5, 1933.—News print production in Sweden totaled 17,578 metric tons during April, bringing the total for the first four months of the current year up to 76,680 metric tons as against 90,928 metric tons during the corresponding period of last year according to reports to the Department of Commerce.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 1, 1933

CIGARETTE PAPER

Standard Products Corp., Lafayette, Havre, 30 cs.; P. J. Schweitzer, Excalibur, Marseilles, 2 cs.; American Tobacco Co., Washington, Havre, 250 cs.; Champagne Paper Corp., Paris, Havre, 464 cs.; Standard Products Corp., Paris, Havre, 30 cs.; American Express Co., Deutschland, Hamburg, 2 cs.

WALL PAPER

F. J. Emmerich, Deutschland, Hamburg, 3 cs., 1 ble.

HANGING PAPER

F. Blank & Co., Paris, Havre, 11 cs.

NEWS PRINT

National Pulp & Paper Co., Kungsholm, Gothenburg, 602 rolls; Parsons & Whittemore, Inc., Kungsholm, Gothenburg, 200 rolls; Perkins Goodwin & Co., Dresden, Bremen, 55 rolls; Daily News, Carinthia, Southampton, 12 rolls; Jay Madden Corp., Washington, Hamburg, 131 rolls; Perkins Goodwin & Co., St. Louis, Hamburg, 429 rolls; H. G. Craig Donnacona 2, Montreal, 567 rolls; H. G. Craig, Donnacona 1, Montreal, 583 rolls; International Paper Co., Cornerbrook, Dalhousie, 3274 rolls; International Paper Co., Bergsnefjord, Oslo, 85 rolls; A. S. Abriskie, Scanyork, Kotka, 44 rolls; Gilman Paper Co., Scanyork, Kotka, 171 rolls; Gilman Paper Co., Scanyork, Kotka, 166 rolls; Jay Madden Corp., Scanyork, Kotka, 312 rolls.

PRINTING PAPER

International F'd'g. Co., J. Jadot, Antwerp, 4 cs.; Ozalid Corp., Statendam Rotterdam, 13 cs.; P. Puttman, Paris, Havre, 10 cs.

WRAPPING PAPER

Wilkinson Grey & Co., Kungsholm, Gothenburg, 73 cs.; Zenith Paper Co., Westernland, Antwerp, 8 cs.

KRAFT PAPER

Brodmill Co., Bergensfjord, Frederickstad, 2 rolls; Arkell Safety Bag Co., Gripsholm, Gothenburg, 27 rolls.

FILTER MASS

R. F. Downing & Co., Deutschland, Hamburg, 10 cs.; H. Reifenberg, Deutschland, Hamburg, 60 cs., 30 bls.

FILTER MATERIAL

J. E. Bernard & Co., Black Eagle, Rotterdam, 60 bls.

FILTER COMPOUND

Atlantic F'd'g. Co., Columbus, Bremen, 25 bls.

FILTER PAPER

Eastman Kodak Co., American Farmer, London, 1 cs.; H. Reeve Angel & Co. Inc., Majestic, Southampton, 4 cs.; E. Fougera & Co., Majestic, Southampton, 67 cs.

DRAWING PAPER

Favor Ruhl & Co., Carinthia, Southampton, 4 cs.

METAL COLORED PAPER

Hensel Bruckman & Lorbacher, Tsuyama Maru, Kobe, 2 cs.

METAL COATED PAPER

K. Pauli Co., Dresden, Bremen, 49 cs.; National City Bank, Dresden, Bremen, 23 cs.; National City Bank, Deutschland, Hamburg, 27 cs.; K. Pauli Co., Deutschland, Hamburg, 82 cs.

SURFACE COATED PAPER

Globe Shipping Co., Dresden, Bremen, 11 cs.; Gevaert Co. of America, Westernland, Antwerp, 24 cs.; Phoenix Shipping Co., Deutschland, Hamburg, 1 cs.

COATED PAPER

Chas. Happel, Deutschland, Hamburg, 5 cs.

PARCHMENT PAPER

——, Dresden, Bremen, 15 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Britannic, Liverpool, 6 cs. (duplex).

TRANSFER PICTURES

Rohner Gehrig & Co., Columbus Bremen, 6 cs.

TISSUE PAPER

D. F. Young, Franconia, Liverpool, 3 cs.; Drytype Stencil Co., Tsuyama Maru, Kobe, 4 cs.; B. F. Drakenfeld & Co., Britannic Liverpool, 1 cs.; W. J. Byrnes, Majestic, Southampton, 2 cs.; Jay Madden Corp., Scanyork, Helsingfors, 1 bbl.

DRAFTING PAPER

A. F. Cofod, Franconia, Liverpool, 1 cs.

SILK PAPER

P. J. Schweitzer, Exarch, Marseilles, 10 cs.; P. J. Schweitzer, Excalibur, Marseilles, 9 cs.

CARD BOARD

Henschel Naeve & Co., St. Louis, Hamburg, 15 cs.

IVORY BOARD

Safran & Glucksman, Inc., Statendam, Rotterdam, 5 cs., 5 bls.

PAPER BOARD

Colmar Paper Corp., Westernland, Antwerp, 11 cs.

STRAW BOARD

A. B. Massa Paper Corp., Statendam, Rotterdam, 760 pkgs.; Haas Bros., Statendam, Rotterdam, 800 pkgs.; Brodmill Co., Inc., Statendam, Rotterdam, 4 rolls.

MISCELLANEOUS PAPER

The Borregaard Co. Inc., Kungsholm, Gothenburg, 883 rolls, 56 bls.; M. M. Cohen, Kungsholm, Gothenburg, 203 rolls, 57 bls.; H. Reeve Angel & Co. Inc., Kungsholm, Gothenburg, 11 bls.; E. H. Sargent & Co., Kungsholm, Gothenburg, 6 cs.; F. B. Vandegrift & Co., Lafayette, Havre, 5 cs.; J. Romer, Oregon Maru, Kobe, 12 cs.; Keuffel & Esser Co., Washington, Hamburg, 18 rolls, 16 cs.; Hudson F'd'g. Co., Paris, Havre, 2 cs.; Keller Dorian Paper Co., Paris, Havre, 2 cs.; Kraemer & Co., Gripsholm, Gothenburg, 139 bls.; Blauvelt Wiley Paper Mfg Co., Gripsholm, Gothenburg, 38 rolls, 10 bls.; W. Bersch, Deutschland, Hamburg, 8 cs.

RAGS, BAGGING, ETC.

C. Nelson, Gourko, Hull, 33 bls. new cuttings; Wronker & Wiseman, Gourko, Hull, 12 bls. rags; ——, Gourko, Hull, 267 bls. rags; ——, Franconia, Liverpool, 59 bls. rags; E. J. Keller Co., Inc., Sinaia, ——, 150 bls. rags; Guaranty Trust Co., J. Jadot, Antwerp, 100 bls. rags; Bank of Manhattan Co., Coelleda, Dublin, 124 bls. rags; Darmstadt Scott & Courtney, Coelleda, Liverpool, 68 bls. bagging; Darmstadt Scott & Courtney, Coelleda, Manchester, 146 bls. bagging; G. W. Millar Co., Coelleda, Manchester, 252 bls. rags; ——, Caledonia, Glasgow, 121 bls. bagging; National City Bank, Caledonia, Glasgow, 48 bls. rags; ——, City of Fairbury, Stettin, 229 bls. rags; Bank of Manhattan Co., American Farmer, London, 96 bls. old cottons; ——, American Farmer, London, 180 bls. bagging; Banco di Napoli Trust Co., American Farmer, London, 30 bls. paperstock; ——, Carinthia, Southampton, 38 bls. rags; ——, Carinthia, Southampton, 53 bls. waste strings; A. W. Fenton, Inc., California, Glasgow, 77 bls. paper stock; E. J. Keller Co., Inc., Excalibur, ——, 653 bls. rags; E. J. Keller Co., Inc., Excalibur, —— 104 bls. bagging; Chase National Bank, Excalibur, Marseilles, 83 bls. rags; ——, St. Louis, Hamburg, 124 bls. rags; J. Cohen & Son, St. Louis, Hamburg, 12 bls. rags; E. J. Keller Co. Inc., Pipestone County, ——, 65 bls. rags; Castle & Overton, Inc., Pipestone County, Dunkirk, 47 bls. rags; Irving Trust Co., Pipestone County, Dunkirk, 25 bls. new cuttings; S. Godfrey, Pipestone County, Dunkirk, 7 bls. rags; Irving Trust Co., Pipestone County, Havre, 15 bls. new cuttings; Castle & Overton, Inc., Pipestone County, Havre, 91 bls. new cuttings; E. J. Keller Co. Inc., Black Heron, ——, 96 bls. bagging; E. J. Keller Co. Inc., Black Heron, ——, 507 bls. rags; E. J. Keller Co. Inc., Tofuku Maru, ——, 105 bls. bagging.

GLUE, STOCK, ETC.

E. Hickey Co., J. Jadot, Antwerp, 62 bls. glue stock; ——, Dresden, Bremen, 380 bags, hide glue; ——, St. Louis, Hamburg, 103 bags hide glue.

CASEIN

D. C. Andrews & Co., Deutschland, Hamburg, 60 bags.

OLD ROPE

Castle & Overton, Inc., Gourko, Hull, 74 coils, 55 bls.; Banco Coml Italiane Trust Co., Gourko, Hull, 61 coils; ——, Gourko, Hull, 155 coils; E. J. Keller Co., Inc., Gourko, ——, 57 coils; A. S. Wilson, Inc., Goelleda, Belfast, 45 coils; ——, Coelleda, Liverpool, 85 coils; National City Bank, Caledonia, Glasgow, 86 coils; Banco Coml Italiane Trust Co., American Farmer, London, 61 bls.; ——, Carinthia, Southampton, 68 coils; W. Steck & Co., Washington, Hamburg, 38 coils; Brown Bros. Harriman & Co., Executive, Seville, 255 bls, 140 rolls; ——, Deutschland, Hamburg, 74 coils.

WOOD PULP BOARDS

Johaneson Wales & Sparre, Inc., Columbus, Bremen, 245 rools; Lagerloef Trading Co., Scanyork, Kotka, 475 bls., 75 rolls.

WOOD PULP

Johaneson Wales & Sparre, Inc., Kungsholm, Gothenburg, 254 bls. sulphite; E. M. Sergeant & Co., Kungsholm, Gothenburg, 897 bls. kraft pulp; Atterbury Bros. Inc., Kungsholm, Gothenburg, 400 bls. sulphite; Pagel Horton & Co. Inc., City of Fairbury, Gefle, 1000 bls. sulphate, 101 tons; Stora Kopparberg Corp., City of Fairbury, Skutskar, 1850 bls. wood pulp, 375 tons; Bulkley Dunton & Co., City of Fairbury, ——, 875 bls. sulphate, 177 tons; J. Manheimer, Statendam, Rotterdam, 50 bls. wood pulp; Castle & Overton, Inc., Statendam, Rotterdam, 750 bls. wood pulp; E. J. Keller Co. Inc., Washington, ——, 565 bls. wood pulp, 87 tons; Atterbury Bros. Inc., Gripsholm, Gothenburg, 200 bls. sulphite; Johaneson Wales & Sparre, Inc., Gripsholm, Gothenburg, 254 bls. sulphite; To Order, Gripsholm, Gothenburg, 150 bls. sulphie; J. Andersen & Co., Gripsholm, Gothenburg, 250 bls. sulphite; Johaneson Wales & Sparre, Inc., Scanyork, Gdynia, 4700 bls. wood pulp, 707 tons; ——, Scanyork, Kotka, 130 bls. sulphate, 26 tons; Lagerloef Trading Co., Scanyork, Kotka, 1143 bls. mechanical, 228 tons; Lagerloef Trading Co., Scanyork, Wiborg, 3795 bls. sulphite 693 tons; Lagerloef Trading Co., Scanyork, Helsingfors, 919 bls. sulphite, 160 tons; Atterbury Bros. Inc., Scanyork, Stockholm, 300 bls. mechanical, 50 tons; Castle & Overton, Inc., Deutschland, Hamburg, 925 bls. wood pulp, 185 tons; E. J. Keller Co., Inc., President Roosevelt, ——, 569 bls wood pulp.

PULPWOOD

Polarus Shipping Co., Fredhem, Irish Cove, N. S., 1480 cords.

ALBANY IMPORTS

WEEK ENDING JULY 1, 1933

Bulkley Dunton & Co., Kelkheim, —, 3450 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING JULY 1, 1933

Bulkley Dunton & Co., Ditmar Koel, ——, 2500 bls. wood pulp; Bulkley Dunton & Co., Kelkheim, ——, 125 bls. wood pulp; Bulkley Dunton & Co., Malaren, ——, 3375 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JULY 1, 1933

American Express Co., American Farmer, London, 81 bls. rags; G. M. Graves Co., American Farmer, London, 40 bls. rags; A. W. Fenton, Inc., American Farmer, London, 22 bls. rags; E. J. Keller Co. Inc., American Farmer, ——, 30 coils old rope; S. Godfrey, Pipestone County, Dunkirk, 6 bls. rags; ——, Pipestone County, Havre, 217 bls. bagging; Bulkley Dunton & Co., Ditmar Koel, ——, 1250 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JULY 1, 1933

——, Coelleda, Liverpool, 256 coils old rope; Bulkley Dunton & Co., City of Norfolk, ——, 500 bls. wood pulp; Bulkley Dunton & Co., Tortugas, ——, 2875 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 1, 1933

Bank of N. Y. Trust Co., Coelleda, Belfast, 126 bls. paper stock; United Clay Mines Corp., Coelleda, Bristol, 64 tons china clay; A. H. Searle, Coelleda, Cardiff, 467 bls. paper stock; The Lang Co., Coelleda, Glasgow, 81 bls. rags; ——, Coelleda, Liverpool, 125 coils old rope; Castle & Overton, Inc., Coelleda, Manchester, 100 bls. rags; ——, City of Fairbury, Stettin, 116 bls. rags; Pagel Horton & Co. Inc., City of Fairbury, Husum, 24000 bls. sulphate, 4000 tons; Gottesman & Co., Inc., City of Fairbury, Gefle, 525 bls. sulphite, 53 tons; Stora Kopparberg Corp., City of Fairbury, Skutskar, 1625 bls. wood pulp, 329 tons; J. Lang Paper Co., Scanyork, Stettin, 350 bls. rags; J. W. Hampton, Jr., Scanyork, Kotka, 152 rolls news print; ——, Scanyork, Kotka, 935 bls. sulphite, 187 tons; ——, Scanyork, Kotka, 130 bls. sulphate, 26 tons; Castle & Overton, Inc., Scanyork, Wiborg, 1234 bls. wood pulp, 246 tons; Lagerloef Trading Co., Scanyork, Helsingfors, 127 bls. mechanical, 25 tons; Jay Madden Corp., Scanyork, Helsingfors, 17 bbls. tissue paper; Atterbury Bros. Inc., Scanyork, Stockholm, 150 bls. mechanical, 25 tons; E. J. Keller Co. Inc., Pipestone County, ——, 217 bls. rags; G. W. Millar Co., Pipestone County, Dunkirk, 345 bls. rags; Darmstadt Scott & Courtney, Pipestone County, Dunkirk, 505 bls. rags; Castle & Overton, Inc., Pipstone County, Dunkirk, 68 bls. new cuttings; ——, Pipestone County, Havre, 72 bls. rags.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, July 5, 1933.

Trading in the local paper market quieted down somewhat, due to the long week-end holiday. Sales forces of the leading paper organizations, however, are fairly confident that the usual midsummer lull will not be so pronounced this year. Quotations on the various standard grades are well maintained.

The news print paper market is exhibiting a stronger undertone and much is expected through the workings of the Industrial Recovery Act. Production in North America is proceeding in sufficient volume to take care of current requirements. There are no undue accumulations at the mills.

While paper board operations have been curtailed during the holidays, the mills will probably speed production to make up for lost time. Prices continue steady to firm. The fine paper market is in a stronger position. Tissues are moving freely. The coarse paper market is also sharing in the general improvement.

Mechanical Pulp

Conditions in the ground wood pulp market are practically unchanged. Demand for both domestic and imported mechanical pulp is satisfactory for the time of year Production in this country and abroad is keyed to production and stocks at the mills are not excessive. No further price changes have been reported.

Chemical Pulp

The chemical pulp market is marking time at present, awaiting a renewal of activities following the holidays. A resumption of lively trading is confidently anticipated in well-informed quarters. Recently advanced quotations on several grades are generally holding up well.

Old Rope and Bagging

Demand for old rope is persistent. Quotations on both domestic and foreign old manila rope are higher. Small mixed rope is also firm. The bagging market is stronger. Gunny and scrap are in seasonal request, while roofing bagging continues to move in good volume.

Rags

The domestic rag market is displaying strength. Demand for cotton rags is quite satisfactory considering the holiday recess. White shirt cuttings are particularly buoyant. Roofing grades are seasonally active. The imported rag market is arousing more interest despite fluctuations of foreign exchange.

Waste Paper

Although the paper stock market is slightly less active, mill interest in the various grades is still in evidence. The lower grades of waste paper are steady, with prices holding to previously quoted levels. Old kraft machine compressed bales are firmer. Hard and soft white shirt cuttings and book stock are fairly active.

Twine

Sentiment in the local twine market continues optimistic. Demand for the various grades is holding up very well for the season. The outlook for the future is considered promising, in some quarters. Prices are generally well maintained and reports of concessions are infrequent.

PHILADELPHIA CONDITIONS IMPROVED

(*Continued from page 19*)

urer of D. L. Ward Company, it is feared he will not be able to preside.

Reports from York, Pa., are that on July 1, the York Haven Paper Company placed its plant on an 8-hour schedule instead of 12-hour schedule—the new plan offering employment to fifty additional hands.

S. S. Shyrock, Jr., head of the centenary firm of Shyrock Brothers, left last week for a trip to the Century of Progress Exposition, going by air. He expects to return by way of the Great Lakes and to arrive in this city at the close of this week.

The Manayunk Mill of the Container Corporation is running to full capacity, and the company is planning expenditures for plant improvement, held back for the past two years. An additional board machine will shortly be put back into service.

American Writing Entertains Printers

HOLYOKE, Mass., July 1, 1933—On Saturday, June 24, the American Writing Paper Company, Inc., was host to seventy-five instructors of printing, who visited them through the courtesy of the Printing Teachers Guild and Beekmen Paper and Card Company both of New York City.

After being conducted through several mills, the visitors gathered at the Hotel Nonotuck for luncheon as guests of the Eagle-A organization. The party later departed for New York by motor.

This is the second tour of the mills of the American Writing Paper Company, by this group. It is one of the activities connected with the Conference on Printing Education held annually at Columbia University.

Fort Orange Paper Co. Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

CASTLETON, N. Y., July 1, 1933—The annual meeting of the Fort Orange Paper Company was held recently at which officers and directors for the year were chosen. Among those elected directors were Peter C. Brashear, Charles T. Church, W. Gorden Lathan, Robert S. Harris, J. Stanley Davis, and E. A. Schroeder.

Grays Harbor to Raise Wages

Effective July 1, the Grays Harbor Pulp and Paper Company will raise wages 10 per cent, according to W. S. Lucey, mill manager. This increase follows an increase of about 10 per cent that went into effect by the Harbor Plywood Corporation a few weeks ago.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, July 5, 1933.

BLANC FIXE.—Paper mill demand for blanc fixe is fairly active. Prices are holding to schedule, without difficulty. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3 to 3½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is in a sound position. Shipments against contract are moving in good volume. Prices are holding up well. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market is firmer. Domestic standard ground is quoted at 12 to 12½ cents and finely ground at 13 to 13½ cents per pound. Argentine standard ground is selling at 11¾ cents and finely ground at 13 cents per pound all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is brisk. The contract movement is fairly heavy. Prices are steady to firm. Solid caustic soda is quoted at from $2.55 to $3.00; while the flake and ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is improving. Demand is gradually increasing. Prices are firm. Imported china clay is quoted at from $12 to $17 per ton, ship side; while domestic paper making clay is selling at from $4.50 to $12 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are satisfactory. Contract shipments are moving at a steady pace. Prices are holding to schedule. Chlorine is quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market has advanced. The grades of gum rosin used in the paper mills are now quoted at from $5.10 to $5.15 per 280 pounds, in barrels, at works; while wood rosin is selling at $3.60 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Some improvement was noticed in the salt cake market. Prices continue firm. Salt cake is quoted at from $13.50 to $14; chrome salt cake at from $13 to $13.50 per ton, at works; while imported salt cake is selling at from $13.50 to $14 per ton, on dock.

SODA ASH.—The soda ash market continues buoyant. Shipments against contract are moving in heavy volume. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows; in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—Steadiness prevails in the starch market. The contract movement is normal. Prices are holding to previously quoted levels. Special paper making starch is quoted at $2.54 per 100 pounds, in bags; and at $2.91 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Trading in the sulphate of alumina market is active. Prices are holding to schedule. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—The talc market is displaying a strong undertone. Contract shipments are well up to average. Domestic talc is still quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $18 to $22 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Leggers	6.50	@38.00
Bonds	4.75	@53.25
Index	6.00	@12.00
Writings—		
Extra Superfine	6.50	@15.00
Superfine	6.25	@14.75
Tub sized	4.50	@ 7.00
Engine sized	4.00	@ 5.00
Book, Cased—		
S. & S. C.	4.50	@ 5.25
M. F.	4.35	@ 4.85
Coated and Enamel	5.25	@ 9.50
Lithograph	5.10	@ 9.50
Tissues, Per Ream—		
White No. 1	.60	@ .80
White No. 2	.55	@ .70
Anti-Tarnish M. G. only	.75	@ .80
Colored	.80	@ 1.00
Kraft	.75	@ .80
Manila	.65	@ .70
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.00	@ 5.25
No. 2 Wood	3.50	@ 4.00
Butchers	3.37½	@ —
Fibre Papers—		
No. 1 Fibre	4.25	@ 5.50
No. 2 Fibre	4.00	@ 4.75
Common Bogus	1.50	@ 3.00
Screenings	2.00	@ 3.00
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs., No. 1	.11	@ —
No. 2	.10	@ —
Bleached, basis 20 lbs.	.13	@ —

(Delivered New York)

News, per ton—		
Roll, contract	40.00	@ —
Rolls, spot	40.00	@ —
Sheets	45.00	@ —
Side Runs	25.00	@ —
Kraft—		
No. 1 Domestic	4.50	@ 4.75
No. 2 Domestic	3.00	@ 3.25
Southern	3.00	@ 3.25
Imported	2.75	@ 3.50
Boards—per ton—		
News	42.50	@45.00
Straw	37.50	@40.00
Chip	40.00	@42.50
Binders Boards	62.00	@70.00
Kraft Liner	52.50	@55.00
Standard 85 Test Jute Liner	35.00	@37.50
Sgl. Mla. Lt. Chip	50.00	@52.50

(F. o. b. Mill)

Wood Pulp Boards	70.00	@80.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—		
Moist	24.00	@26.00
Dry	24.00	@26.00

(F.o.b. Mill)

No. 1 Domestic and Canadian	18.00	@26.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	2.35	@ 2.50
Easy Bleaching	1.70	@ 1.85
No. 1 strong unbleached	1.60	@ 1.80
Mitscherlich unbleached	1.65	@ 1.85
No. 2 Strong unbleached	1.45	@ 1.55
No. 1 Kraft	1.35	@ 1.60
No. 2 Kraft	1.20	@ 1.35
Sulphate—		
Bleached	2.25	@ 3.00

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—		
Bleached	2.00	@ 3.75
Easy Bleaching	1.60	@ 1.75
News	1.50	@ 1.65
Mitscherlich unbleached	2.25	@ 2.50
Kraft (Domestic)	1.50	@ 2.75

(Delivered Paper Mills)

Soda Bleached	2.25	@ —

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	5.50	@ 6.00
Silesias No. 1	3.75	@ 4.25
New Unbleached	5.50	@ 6.00
New Soft Blacks	3.00	@ 3.25
Blue Overall	2.75	@ 3.25
Fancy	1.50	@ 1.75
Washables	1.25	@ 1.50
Mixed Khaki Cuttings	2.50	@ 2.75
O. D. Khaki Cuttings	2.75	@ 3.25
Men's Corduroy	1.50	@ 1.75
New Mixed Blacks	2.50	@ 2.75

Old Rags

White, No. 1—		
Repacked	3.75	@ 4.00
Miscellaneous	3.00	@ 3.50
White, No. 2—		
Repacked	2.00	@ 2.50
Miscellaneous	1.75	@ 2.00
Thirds and Blues—		
Repacked	1.75	@ 2.00
Miscellaneous	1.50	@ 1.75
Black Stockings	2.50	@ 3.00
Roofing Rags—		
No. 1	.90	@ .95
No. 2	.80	@ .85
No. 3	.75	@ .80
No. 4	.70	@ .75
No. 5A	.65	@ .70

Foreign Rags

New Rags

New Dark Cuttings	1.50	@ 1.60
New Mixed Cuttings	1.60	@ 1.70
New Light Silesias	3.50	@ 3.75
Light Flannelettes	3.25	@ 3.50
Unbleached Cuttings	5.00	@ 5.25
New White Cuttings	5.00	@ 5.50
New Light Oxfords	3.25	@ 3.50
New Light Prints	2.25	@ 2.50

Old Rags

No. 1 White Linens	6.25	@ 6.75
No. 2 White Linens	5.25	@ 5.75
No. 3 White Linens	4.25	@ 4.00
No. 4 White Linens	2.00	@ 2.25
No. 1 White Cotton	3.75	@ 4.00
No. 2 White Cotton	3.00	@ 3.25
No. 3 White Cotton	2.50	@ 2.75
No. 4 White Cotton	1.50	@ 1.60
Extra Light Prints	2.00	@ 2.25
Ord. Light Prints	1.75	@ 1.85
Med. Light Prints	1.55	@ 1.65
Dutch Blue Cottons	1.65	@ 1.80
French Blue Linens	2.10	@ 2.25
German Blue Linens	1.85	@ 2.00
German Blue Cottons	1.35	@ 1.50
Checks and Blues	1.30	@ 1.40
Lindsay Garments	1.10	@ 1.15
Dark Cottons	.95	@ 1.00
Old Shopperies	.85	@ .90
New Shopperies	.80	@ .85
French Blues	1.50	@ 1.65

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.20	@ 1.30
Domestic	1.15	@ 1.25
Wool Tares, light	1.00	@ 1.10
Wool Tares, heavy	1.00	@ 1.10
Bright Bagging	.95	@ 1.05
Manila Rope—		
Foreign	2.25	@ 2.50
Domestic	2.50	@ 2.75
Small Mixed Rope	1.00	@ 1.25
New Burlap Cut	1.25	@ 1.50
Hessian Jute Threads—		
Foreign	2.60	@ 2.75
Domestic	2.80	@ 3.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	2.35	@ 2.50
Ordinary Hard White No. 1	2.15	@ 2.25
Hard White No. 2	2.00	@ 2.10
Soft White No. 1	1.90	@ 2.00
Flat Stock—		
Stitchless	1.00	@ 1.10
Overissue Mag	1.00	@ 1.10
Solid Flat Book	.90	@ 1.00
Crumpled No. 1	.85	@ .90
Solid Book Ledger	1.50	@ 1.75
Ledger Stock	1.00	@ 1.10
New B. B. Chips	.65	@ .70
Manilas—		
New Env. Cut	1.60	@ 1.70
New Cuttings	1.20	@ 1.25
Extra No. 1 old	.90	@ 1.00
Print	Nominal	
Bogus Wrapper	.70	@ .80
Container	Nominal	
Old Kraft Machine—		
Compressed bales	1.20	@ 1.30
News—		
No. 1 White News	1.10	@ 1.15
Strictly Overissue	.75	@ .85
Strictly Folded	.70	@ .75
No. 1 Mixed Paper	.70	@ .75

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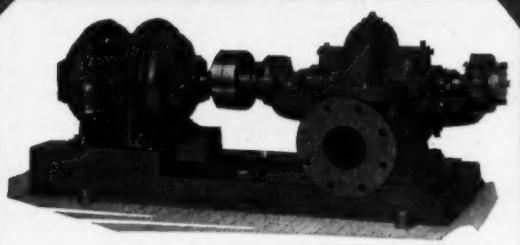

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Twines
(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Flaxseed Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¾	@	.11¾
Fine Tube Rope—			
4-ply	.13¼	@	.14¾
3-ply	.14¼	@	.14¾
2-ply	.15¼	@	.15¾
Paper Makers Twine	.08¾	@	.10¼
Box Twine, 2-3 ply	.12¾	@	.13½
White Hemp	.12¾	@	.15¾
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper
(F. o. b. Mill)

Bag Bond	.30	@	.33¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03½
Manila Tissue	.07	@	.07¾
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	—
Solid News	43.50	@	—
Manila Lined Chip	47.50	@	—
Patent coated	55.00	@	—
Container Lined—			
85 Test	60.00	@	65.00
100 Test	60.00	@	70.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	1.80
No. 1 Hard White	1.40	@	1.50
No. 1 Soft White	1.20	@	1.30
Ledger & Writings	.80	@	.90
Solid Books	.80	@	.90
Blanks	1.00	@	1.05
Krafts	.90	@	1.00
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	1.00	@	1.05
Print Manila	.60	@	.65
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.55	@	.65
Mixed Papers—			
No. 1	.50	@	.55
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.10
Manila Sul., No. 1	.03	@	.06
Manila No. 2	.03	@	.05
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Southern Kraft	2.75	@	4.00
Common Bogus	.03	@	.04½
(Delivered Philadelphia)			
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	37.00	@	45.00
Chip Board	40.00	@	45.00
Wood Pulp Board	70.00	@	85.00
Tar Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.10	@	2.20
No. 2 Hard White	1.75	@	1.90
No. 1 Soft White	1.70	@	1.75
No. 2 Soft White	1.10	@	1.15
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.70	@	.80
Solid Ledger Stock	1.25	@	1.30
Writing Paper	1.10	@	1.20
No. 1 Books, heavy	1.00	@	1.10
No. 2 Books, light	.75	@	.80
No. 1 New Manila	1.25	@	1.30
No. 1 Old Manila	.90	@	1.00
Print Manila	.80	@	.90
Container Manila	.85	@	.90
Old Kraft	1.20	@	1.25
Common Paper	.60	@	.65
No. 1 Mixed Paper	.70	@	.75
Straw Board Chip	.65	@	.70
Binders Board Chip	.65	@	.70
Corrugated Board	.90	@	.95
Overissue News	.75	@	.80
Old Newspaper	.65	@	.70

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05¾	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	—	@	.04¾
No. 2 Kraft	.03	@	—
(F. o. b. Boston)			
Southern Kraft	.03	@	—
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	—	@35.00
Straw Board in Sheets, basis 35s to 70s	—	@40.00	
Filled News Board	42.50	@47.50	
Chip Board	40.00	@45.00	
Chip Board (Creasing)	—	@42.50	
Single Manila Lined Chip	50.00	@60.00	
Single White, Patent Coated News Board—			
Bender	60.00	@70.00	
Wood Pulp Board	70.00	@75.00	
Binder Boards	62.00	@75.00	

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Soft White	1.40	@	1.70
No. 1 Old Manila	.50	@	.60
No. 1 Mixed	.80	@	.90
No. 2 Mixed	.40	@	.50
Solid Ledger Books	1.20	@	1.40
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.70	@	.85
No. 1 Books, heavy	.65	@	.75
No. 1 Books, light	—	@	.30
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.70	@	.80
White Blank News	1.05	@	1.15
No. 1 Kraft	1.10	@	—
Manila	.85	@	1.00
No. 1 Mixed Papers	.60	@	.65
Print Manila	.65	@	.80
Overissue News	.70	@	.80
Old Newspapers	.57½	@	—
Box Board Chips	.55	@	.65
Corrugated Boxes	.50	@	.65
Screening Wrappers	.60	@	.75

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	2.25	@	—
Domestic	2.50	@	—
Transmission Rope	1.25	@	—
Mixed Strings	.75	@	—
Jute Rope	.95	@	1.05
Jute Carpet Threads	.45	@	.10
Gunny No. 1—			
Foreign	1.20	@	1.25
Domestic	1.10	@	1.15
Bleachery Burlap	2.00	@	2.25
Scrap Burlap	.80	@	.85
No. 1 Scrap Burlap	1.00	@	—
Scrap Sisal	.80	@	1.00
Scrap Sisal for shredding	1.10	@	—
Wool Tares, heavy	1.10	@	1.25
New Burlap Cutting	.95	@	1.00
Australian Wool Pouches	2.50	@	—
Heavy Baling Bagging	1.25	@	1.50
Paper Mill Bagging	.65	@	.80
Bagging No. 2	.50	@	.60
No. 1 Burlap	1.75	@	2.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	—	@	.01½
New White No. 1	.05½	@	—
New White No. 2	.04½	@	.05
Silesias No. 1	.03½	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.06	@	—
Fancy	—	@	.02½
Washable	—	@	.01½
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.03	@	.03¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	.04	@	.04¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	—
White No. 2—			
Repacked	.01½	@	.01¾
Miscellaneous	.01½	@	.01¾
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	1.10	@	1.25
Miscellaneous	.85	@	.90
Black Stockings	2.25	@	2.50
Roofing Stock			
No. 1	1.10	@	—
No. 2	.85	@	.90
No. 3	.50	@	.55

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.85	@	1.00
New No. White Shirt Cuttings	.04½	@	.05
Dutch Blues	1.50	@	1.75
New Checks & Blues	2.25	@	2.50
Old Fustians	1.15	@	—
Old Linsey Garments	.90	@	1.05

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.09¾	@	—
No. 2 Sulphite	.08	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.08½	@	.10½
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.00	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	18.00	@20.00	
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	45.00	@50.00	
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	1.80	@	2.00
Soft White	1.40	@	1.80
White Blk. News	1.25	@	1.50
Book and Ledger Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manila—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.55	@	.80
Kraft	1.25	@	1.50
Strictly Overissue	.70	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.55	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.04¼	@	.04¾
Fancy Shirt Cuttings	.02¼	@	.02½